C. Dibdin.

Pliny says The Mentagra or Tetter of the Chin and Fa
was not known in Rome till the days of Tibe
The Carbuncle came to Rome in the Cen
ship of L Paulus & J Marius.
The Elephantiasis came in the time of Pomp
The Coqueluche came to France in 1510 -
The Sweating Sickness to England in 1529 -
Lues Venerea Naples in 1492
Pony Disease in Othiopia - The Locust eaters or
Acridophagi are a lean people shorter & blacker
others - short lived 140 years - live on Locusts tabl
dried - Before death their bodies become loc
scabbed & itchy - so that with.

.D. 543. regn Imperator Justinian. The plague broke
out in Constantinople - It spread its infection over t
whole earth & is said to have lasted 52 years.
See Evagrius Histor. Ecclesiast. lib. 4. C. 29.
Procopius De Bello Persico, l. 2. Cap. 22.
.D. 1709. Plague broke out at Dantzic, & spread t
Hamburg Copenhagen & through Poland.
D. 1748. The plague this year almost depopulat
Messina. The deaths were 70.000. 1743.

29,960/B

INGRAM, D.

Unicorns Horn -

Dottipers live on Scorpions - Ducks upon Toads
Quails upon Hellebore - Pon Chy & Mon Kie
Spiders - Stares upon Hemlock
Apples Antipathy - The Sect. of Francis the 1st had so
that he was obliged to put bread to his nostrils
they were at table his nose wd bleed if held to
Cardinal Carafa cd not endure that of roses.

Lemates or Vinca pervinca - is said to resist [illegible]
before the heads of the dead were bound with [illegible]
the juice of Cedar very antiputrescent

Kircher, Langius, &c have imagined Insects & the
va to be the means of propagating the Plague

T. Barfoot Esqr
to C. Dibdin
6 Sep 1816

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# AN HISTORICAL ACCOUNT OF THE Several PLAGUES that have appeared in the World ſince the Year 1346.

WITH

An ENQUIRY into the preſent prevailing Opinion, That the PLAGUE is a Contagious Diſtemper, capable of being tranſported in Merchandize, from one Country to another.

In which

The Abſurdity of ſuch Notions is expoſed, and the Arguments that have been made uſe of to ſupport them, refuted.

To which are added

A particular Account of the Yellow Fever, ſhewing its periodical Appearance to be ſimilar to the Plague.

ALSO

Obſervations on Dr MACKENZIE's Letters; read before the Royal Society on this Subject.

AND

An Abſtract of Capt. ISAAC CLEMENS's Voyage in the Sloop FAWEY, From their Arrival in the Mould of Algiers, to the Sinking of her, on a Suppoſition that the PLAGUE was on board her. Taken from his Log-Book.

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*By* DALE INGRAM, Surgeon and Man-Midwife.

---

*Dii talem terris avertite peſtem.* VIRG.

---

*LONDON:*

Printed for *R. Baldwin*, at the Roſe, in *Pater-noſter Row*, and *J. Clark*, under the *Royal Exchange*.

M.DCC.LV.

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# JOHN, Marquiſs of GRANBY,

THIS

WORK is humbly INSCRIBED,

BY

His LORDSHIP's

Moſt Devoted,

And Moſt Obedient

Humble Servant,

Fenchurch Street,
*Dec.* 14, 1754.

DALE INGRAM.

The Author was at Smyrna in 1733 when
the Plague raged - Was a Prisoner
the Lazaretto at Leghorn - has
en the Endemial Disease called the
llow Fever in the West Indies
ere He resided Six Years, hence
may be presumed He is not
ntity in some share of Knowledge
Indemial and Epidemical
Distempers —

# INTRODUCTION.

OPINIONS, however abſurd and repugnant to mechanicks and philoſophy, when handed down to us from antient times, frequently makes ſuch ſtrong impreſſions on our minds, as to be with great difficulty ſhaken off. So ſtrong are our attachments to old cuſtoms, that it is with difficulty even facts themſelves can reclaim us from them. What old woman can you find that will believe a piece of black ſilk is as good if not better than green,* to hang before ſore watry eyes? Habit has ſtrengthened the belief, and anatomical reaſons cannot make her change it.

I am therefore afraid that this work, however conformable to nature and reaſon, will

* Originally anatomical enquiries were confined to animals and beaſts, from which the cuſtom of hanging any thing green over the eye was firſt practiſed, becauſe the inward membrane (~~ſclerotica~~) of all beaſts that eat graſs is green, but in human eyes it is black.

find but an unkind reception in the world on account of its Title; ſince a conceit has for ſome while prevailed, that the plague is a contagious diſeaſe, and as ſuch, *capable of being tranſported from foreign climes and countries.*

The community muſt not be ſurpriſed at my endeavours to remove from their eyes, that *blindneſs* to the nature of the Plague, which, like a *cataract*, has been growing ever ſince the time of Pope *Paul:* For I conceive this dark and confuſed notion ought to have been depreſſed and removed long ſince, leſt even *itſelf* ſhould grow malignant and contagious. I ſhall treat the diſtemper *cito, tuto, et jucunde*, and, though it has been ſo long deeply rooted, ſhall remove it as if it was a ſmall cobweb. An operation of this nature the merchant and the public might have deſired long ago, ſince it would have ſaved great treaſure to the one, as well as fatigue and trouble of quarantining, *&c.* and afforded great ſatisfaction to the other.

The principal modern writers on the Plague have been only thoſe, who, in a warm room, have travelled over the works of a few who wrote in the laſt century. They never ſaw the diſeaſe itſelf in its mother country, but were confined

confined to a meer deſcription, and could only judge of what they read; from which, at beſt, they could have but a confuſed idea of malignant and infectious diſtempers.

In order to ſet this affair in a proper light, I ſhall ſhew you ſome of the abſurd hiſtories which have been quoted by our modern writers, to prove that the Plague *may be preſerved in goods, wares, and merchandizes*, for many years, and afterwards conveyed from one nation to another.

I am not afraid to ſay, that the fear of the Plague being communicated by commerce and brought into *England*, has had almoſt as fatal effects as the Plague itſelf; for it has been alledged with reaſon, and from good authority, that terrour and dread diſpoſes the body to the reception of every ſpecies of malignity, ſince its influence is ſo conſiderable, that it leſſens, if not deſtroys, the vital motions, weakens the conſtitution, ſinks the ſpirits, and renders the œconomy leſs able to reſiſt putrefaction. This doctrine is confirmed by accounts frequently recorded, and witneſſed by people who, thro' dread and conceit, have received the ſmall pox. It is therefore the intereſt of every one to avert

theſe evils, as it is a public cauſe; ſince continual terrour has given occaſion to quarantines, which muſt be hurtful to the merchants, manufacturers, ſeveral trades, the revenue of the cuſtoms, if not in time the deſtruction of commerce; and ſhould we ſee the time, when ſuch apprehenſions ſhall be further extended, we may expect, in ſeaſons of fevers, to be deſerted by friends and relations, expoſed to famine, plunder, murder, and deſpair; or left to periſh for want of care and aſſiſtance. Conſiderations like theſe, I hope, are ſufficient to excuſe me for launching into the world the following diſcourſe.

I ſhall now haſten to recite the ſeveral invaſions of the Plague from 1346, in different nations, not ſo much to ſhew its antiquity, as to prove its different viciſſitudes in its uſual viſitations, which will, in a great meaſure, demonſtrate, that this diſeaſe always proceeds from a *diſtemperature of the air*.

1340. Plague visited Florence and carried many of the inhabitants. It is described by John Villani

CHAP.

AN

# HISTORICAL ACCOUNT

OF

# PLAGUES.

## CHAP. I.

1346. ONE of its moſt dreadful irruptions was in 1346; it broke out firſt in *China*, then travelled through the *Indies* into *Syria*, *Turky*, *Greece*, *Egypt*, and *Africa*.

1347. The next year *Sicily*, *Italy*, *Piſa*, and *Genoa* felt its rage.

1348. *Savoy*, *Provence*, *Dauphiny*, *Catalonia*, and *Caſtile* ſuffered by its fury.

1349. *Germany*, *Hungary*, *Flanders*, *Denmark*, and *England* ſuffered wonderfully. It continued with us nine years, in one of which there were buried no leſs than 50,000 people in the *Charter-houſe yard**.

* By this firſt journal it appears, that the Plague was three years travelling from *China*, thro' various nations, to *England*, and that its courſe was from ſouth-eaſt to north-weſt, which is agreeable to the obſervations made by the old *Grecian* philoſophers.



1360. Plague broke out in England & spread through France
rovence Avignon Lombardy & Italy. It carried off nine Cardin
nd Seventy Bishops, and upwards of 50. 000. laity. It is describ
y Matthew Villani. - Damascus & Cairo were nearly
epopulated at this same Year.

1514. a murrain of the horned Cattle. commenced in the Tirol or Tyrol and spread into Lombardy. See Fracastorius.



1525. It broke out in *Leyden* and *Vienna*.

1551. *Sennertius* tells us, the Plague this year not only run all over *Europe*, but almoſt over the inhabited world.

1564. The Plague appeared in *Conſtantinople*, *Alexandria*, (and again) in *Leyden*, *Dantzick*, *Cologn*, *Vienna*, and *England*.

1566. All the upper *Rhine* and *Hungary* were attacked.

1572. *Platerus* gives us an account of its havock in *Baſil*.

1596, and 1597. The dioceſe of *Cologne*, *Weſtphalia*, and counties of *Waldee*, *Wittenſtein*, and *Haſſe*; in which places it made great ravage.

1592. There died in *London* 11,503 of the Plague; and the year following no leſs 10,662 periſhed.

1603. The Plague appeared in *London* again, of which there died 35,417.

1622. *London* was viſited for 4 ſucceſſive years.

In the firſt died 8,000
In the ſecond 11,000
In the third 12,000
In the fourth 35,417; exactly the ſame number as in the year 1603.

1622.

1622. At *Amſterdam* the Plague broke out the ſame year as at *London*, *viz.* 1622, and raged eight years,

| | |
|---|---|
| In 1622 there died | 4,151 |
| In 1623 ——— | 5,929 |
| In 1624 ——— | 11,795 |
| In 1625 ——— | 6,781 |
| In 1626 ——— | 4,425 |
| In 1627 ——— | 3,976 |
| In 1628 ——— | 4,497 |

1625. *Leyden* this year was attacked, 9597 periſhed. And in 1635 there fell 14,381 perſons; but, what is moſt remarkable, the burials in fifteen weeks increaſed to the ſaid number 14381, from 96, and in ten weeks decreaſed again to 100.

* 1636. *London* was viſited, and 10,400 were buried by this diſtemper.

1653. This diſtemper broke out at *Cracow* in *Poland*, at *Dantzick*, and *Koningſburgh*. In the firſt there died 17,000 chriſtians,

| | |
|---|---|
| Jews | 20,000 |
| At *Dantzick* | 640 |
| At *Koningſburgh* | 490 |

1654. It raged ſo furious in *Copenhagen*, that 700 in a week were carried off.



Thos Cocke on air. Says it broke out furiously at first, but the king having permitted the people to quit their houses not one in twenty of the well persons removed fell sick nor one in ten of the sick died.

1655. At *Amſterdam* 13,287 died in twenty-one weeks, from *July* to *November*. In *September* it was at its height, there dying in one week 896.

1656. At *Naples*, in the month of *May*, 1300 died in a day, and in three weeks in *June* 5000. The ſame year, at *Rome*, for many days ſucceſſively, 100 died.

1656 and *

1657. The Plague attacked *Genoa* in Midſummer, and in one week 12000 died; but, though it increaſed to 1600 a day, in *December* the burials decreaſed to ſix.—It may be remarked, that this *Poliſh* Plague travelled from the ſouth-eaſt to *Denmark* and *Amſterdam*, then turned its courſe according to the winds ſhifting more ſoutherly, when *Naples* and *Rome*, and afterwards *Genoa*, felt it.

1663 and 1664. The diſeaſe broke out afreſh at *Amſterdam*, and in the 1ſt year there died 9752. And in the following year 24,148.

1664. †

1665. From *Amſterdam* came the memorable Plague to *London*, being its tenth viſitation, which in eight months carried off 67,663 perſons, beſides thoſe who died of other diſeaſes. Theſe

* continued for 2 years. The first year 10.000 died, and in the next 60,000. See head. p. 98.
This was stop't during Winter by a hard frost of three months duration, and broke out again in Spring of 166
See Hodges de Peste.

These are the most remarkable Plagues that have appeared since 1346, which I have taken from histories; to give as much satisfaction as possible, I have here subjoined a particular account of the progress of the Plague in 1665, as the weekly bills for that year are not easily to be met with. It has been said by some, that the Plague broke out in *December* 1664, therefore from that time I shall begin the account, *Anno* 1664.

## *Journal of the* PLAGUE.

From *Dec.* 20, 1664, to the 27th, died 1.
From *Feb.* 7, 1665, to the 14, died 1.
To the 18th of *April* died 0.

Weeks.

| 1665. | first | second | third | fourth | fifth |
|---|---|---|---|---|---|
| *April* | 0 | 0 | 2 | 0 | 0 |
| *May* | 0 | 9 | 3 | 14 | 17 |
| *June* | 43 | 112 | 168 | 267 | |
| *July* | 470 | 725 | 1089 | 1843 | 2010 |
| *August* | 2817 | 3880 | 4237 | 6102 | |
| *September* | 6988 | 6544 | 7165 | 5533 | 4929 |
| *October* | 4327 | 2665 | 1421 | 1031 | |
| *November* | 1414 | 1050 | 652 | 333 | |
| *December* | 210 | 243 | 281 | | |

Total 67,663.

In a paper published by the Free Thinker, the Plague, notwithstanding the fire of *London*,

is

is carried on to 1679, but whether it continued ſo long I cannot poſitively ſay, however I ſhall give it you as it appears to me, tho' I cannot forbear ſaying, that after any violent diſorder has long reigned, it is no eaſy matter to believe, that every ſpecies of a fever muſt be of the ſame nature and malignity; beſides, it is doubtful, whether the inſpectors of the dead were very proper judges, for I cannot think people were wiſer in thoſe times than they are now, in diſtinguiſhing one ſpecies of a fever from another. And how is it poſſible, that ignorant old women, who were the ſearchers of pariſhes, could make a true diſtinction? However, the reader is left to judge for himſelf.

*The Second Journal*

| Years | | Perſons | Years | | Perſons |
|---|---|---|---|---|---|
| 1666 | died | 1998 | 1673 | died | 5 |
| 1667 | —— | 35 | 1674 | —— | 3 |
| 1668 | —— | 14 | 1675 | —— | 1 |
| 1669 | —— | 3 | 1676 | —— | 2 |
| 1670 | —— | 0 | 1677 | —— | 0 |
| 1671 | —— | 5 | 1678 | —— | 5 |
| 1672 | —— | 5 | 1679 | —— | 2 |

By theſe liſts the increaſe and decreaſe of this diſtemper clearly appears, and at the ſame time the effect of cold weather on the diſtemper is demonſtrated; for, in the third week

week of *September*; it was at its height, there being buried 7165; and in the third week of *December* only 281. It is alſo worth our notice, that there died in *Amſterdam*, the firſt week in *September*, *Anno* 1664, 1041 perſons, and that the burials for 18 weeks before, increaſed from 331 to the ſaid number of 1041, and in twelve weeks decreaſed again to 330.

This Account is taken from the bills of mortality of that city; now the ordinary number in the weekly bills of mortality was about 118, which is about one third of the deaths (in that century) uſually happening in *London*.

In 1712 & 1713. the Plague raged in Hannover in Lunenburg Zell & Harburg.

CHAP.

# CHAP. II.

## *A plain and concise Narrative of the* PLAGUE *at* Marseilles, *in* 1720.

THE Plague was no stranger to this city, for it had broken out in the years 1580, 1630, 1649, and 1650; however this last visitation in 1720, perhaps, was as remarkable as any heard of; for the inhabitants suffered great hardships thro' scarcity of corn, fuel, wine, and other necessaries, as the city was cut off from any communication with the neighbouring provinces and countries adjoining; so that they were reduced in *August* to extreme famine.

In the height of this pestilence every one that could removed out of the city. The magistrates of health, the judges of the city, the civil governors, rectors of hospitals, commissaries, workmen of all trades, shoemakers, butchers, and even the guards themselves, who were appointed to prevent the flight of others, together with the captains and militia officers, all abandoned the city. The Marquis *de Pille*, the sheriffs, and only a few others, were left to govern;

govern; yet ſo great was the increaſe of burials in fifteen days, that on the 23d of *Auguſt* there died near one thouſand.

The 25th of *Auguſt* the Plague laid hold of all the four parts of the city, and continued to the end of *September*, during which time there died more than a thouſand a day.

About the 28th the Plague increaſed inſomuch that 2000 died in a day; the public markets all along the keys of the port, the play-houſe, and all the public places, were filled with piles of dead bodies: There were alſo not leſs than ten thouſand dead dogs floating in the harbour, ſo that the regulator of the fiſhermen was ordered to draw them ſo far without the chain, that the current of the water might not bring them in again.

Probably theſe animals died partly by the famine, and partly by the diſeaſe, or by eating the fleſh of the dead as they lay rotting in the ſtreets.

On the 31ſt of *Auguſt* the ſeveral hoſpitals, convents, and houſes that were employed for receiving the ſick, were not ſufficient to receive them;

them. The Plague alſo followed the deſerters with great precipitation, deſpair, and confuſion, ſpreading every where, inſomuch, that on the firſt of *September* a hundred ſlaves were granted to the ſheriffs to bury the dead, the quantity being ſo great, that eleven carts were employed daily to carry them off.

Every day twelve thouſand were by this method removed from the ſtreets and public places, but, notwithſtanding this expeditious method, ſome, for want of further aſſiſtance, remained ſo long in their houſes after they were dead, that their bodies rotted to ſo great a degree, that they could not be removed but by piece-meal.

Amongſt thoſe that died were 5000 belonging to the Town-houſe, *viz.* 30 of the bandalier guards, all the guards of the civil government, all the guards of the city except one, all the lieutenants except two, almoſt all the captain-lieutenants, the guards of the privilege, *du Vin*, being five brigades; the ſerjeants of the watch, 350 of the company of guards, and all the valets of the city belonging to the magiſtrates.

Amongſt the divines who attended the ſick, the following received the contagion in performing their duties to the afflicted, and died, *viz.* 42 Capuchins, 21 Jeſuits, 32 Obſervatins, 29 Franciſcans, 10 bare-footed Carmelites, 22 reformed Auguſtins, and every one of the great Carmelites, the great Trinitarians, the reform'd Trinitarians, the religious of Loretto, of Morey, likewiſe the Dominicans, * and the great Auguſtins, *altho' they had remained in their convents*; beſides a great number of ſecular prieſts, the vicar of the chapters and pariſhes, alſo moſt of Biſhop *Boromer*'s domeſtics, and the ſieur *Bourgezal*, canon of the great church, all periſhed.

The hundred galley ſlaves, which were lent to bury the dead, all died, or were dying, in ſix days, for want of whoſe help, there were lying in the ſtreets, on the 6th of *September*, 2000 dead bodies, beſides a number in the houſes; therefore the magiſtrates petitioned the captains of the galleys for a hundred more

* Theſe Friars ſhut themſelves cloſe to prevent a contact, notwithſtanding which they were afflicted with the diſeaſe; but, pleaſe to obſerve, it could not be by contagion, but by infection, and that too from the air.

ſlaves,

ſlaves, 40 ſoldiers, 4 corporals, and 4 boatſwains, which were now granted them.

On the Eſplanade, called the *Turret*, which lies on the ſea ſide, between the houſes and the rampart, all along St *John*'s Fort to the great church, there were found upwards of a thouſand more dead, the freſheſt of whom had lain near three weeks; for their bodies ſcarcely retained the leaſt appearance of the human form; and the vapours which proceeded from them were offenſive beyond expreſſion, their limbs being full of worms and maggots, their bowels were burſt out of their bellies, and limbs rotten and fallen aſunder, ſo that it was impoſſible to remove them far off; therefore the two baſtions of the rampart *de la Tourette* were broken, and the bodies thrown in them. A hundred more ſlaves were granted for this work.

In ſhort, the Plague became ſo rife throughout the whole city and ſuburbs, that neither the new hoſpitals, with the additional Plague houſes, were ſufficient to receive the ſick, nor the many large ditches opened in many places, tho' 44 yards long and 16 broad, were capable of holding the dead. The inhabitants were

ſo

ſo weakened by fatigue, that they could ſcarce move; the ſeveral bodies of ſlaves granted from the gallies, and the peaſants were all deſtroyed; ſo that they had now none able to fetch in the corn, granted by other provinces.

All the apothecaries, druggiſts, and grocers were either dead or run away, and no medicines were to be found in the city. The notaries were gone off, ſo there was therefore nobody to make the wills of the ſick. The women were brought to bed without any to aſſiſt them; thoſe who were yet alive thought of nothing but death, famine, or deſpair, for all the ſources of charity were ſtopped. Heaven ſeem'd to them (according to the ſcripture expreſſion) as braſs, and the earth as iron; every ſtreet was almoſt barricaded up with wearing apparel, houſhold goods thrown out of the houſes, dead bodies, and dying people, gaſping for breath; inſomuch that there was no paſſing from one ſtreet to another.

The confuſion was ſo great, that neither officers, ſurgeons, or ſervants could be perſuaded to come into the city without an exorbitant price. 2000 livres a month were offered to every maſter ſurgeon, 1000 to ſurgeons of vil-

lages, and to all apprentices and journeymen 300 livres a month, with their freedom of the city, lodgings, and proviſions. This havock and conſternation laſted till the 7th of *October*, when it abated in the city, but ſtill raged in its territories. However two new hoſpitals being finiſhed, the ſick that were found in the ſtreets and public places were removed, after which they ſet about cleanſing the ſtreets, and removing the rubbiſh, ordure, and filth.

Of this there was ſo much to be done, that it took up a month's time, notwithſtanding dung-carts were provided in great plenty, which carried the filth down to large barges, to be conveyed out of the port, and thrown into the ſea.

About the 20th the diſeaſe was ſo much abated, that the bell was tolled, and tapto beat, which had not been done before, and now they looked after thoſe who had robbed the houſes and pillaged the ſick, and gave orders to prevent robberies for the future.

The 27th, the diminution of the diſtemper was ſo ſenſible, that the ſeveral hoſpitals were more than ſufficient to contain the ſick, and that of the curables was of no farther uſe.

On

On the 30th, crouds of ſurgeons, doctors, apothecaries, and druggiſts, as well maſters as journeymen, came from all parts into the city, inſomuch that public bills were obliged to be put up in different parts, to contradict the former orders of the magiſtrates in regard to the rewards that had been offered; for the diſtemper was ſo much abated, that they had no occaſion for them.

This abſtract is introduced to ſhew the wonderful devaſtation of a peſtilence, and to convince you, that I am truely ſenſible of its horror wherever it rages, and therefore ſhall be very circumſpect in what I ſhall offer to your conſideration in the enſuing diſcourſe.

# CHAP. III.

*Of the ſeveral Methods that were taken in* 1665, *to prevent the Infection of the* Plague *ſpreading in* London; *and alſo the Cautions made uſe of at* Marſeilles, *in* 1720.

THE latter end of the year 1664, according to the hiſtories of that time, the great Plague made its appearance in *London*, the writers don't all agree about the place where it broke out, for one* ſays *Weſtminſter*, another, St *Giles*'s, and a third *Clare-market*. Neither do they pretend to ſay what ſhip, or from what place it was imported. However only two perſons died from the 20th of *December* to the 18th of *April* 1665.

Dr *Hodges* † tells us, that it broke out about the cloſe of the year 1664, and that two or three perſons died ſuddenly in one family at *Weſtminſter*, whence it was ſoon after convey'd into the city, by ſome timorous people, removing from thoſe parts, and carrying the infec-

* If this Plague had been brought in merchandize from *Turkey*, the Cuſtom-houſe and its neighbourhood, I ſhould have thought, were the places moſt likely for its appearance.

† See the Journal.

tion

tion with them; and further, that about the laſt day of *December* a hard froſt ſet in, which laſted three months, during which one perſon had two Plague biles, but he recovered.

This is a ſtrange account, indeed, for upon the froſt breaking, which was ſome time in *March*, or the beginning of *April*, the Plague was not to be found.

About the third week in *April* began this diſtemper, when two died and no more; and in the ſecond week in *May* * nine died; the week after three, and about the 26th of *May* the diſeaſe ſpread itſelf evidently into ſeveral pariſhes.

On this orders were iſſued to ſhut up all infected houſes, that neither relations nor friends might receive or communicate the infection, and the houſes were diſtinguiſhed by being marked with a *red croſs*, and theſe words *Lord have mercy upon us.* Guards alſo were ſet to the doors, to prevent the diſeaſed from coming

* It does not appear from hiſtory, from whom the contagion was received, it could not be from the man who had two plague biles, for he was cured in *Chriſtmas* hollidays, and was well long before the froſt broke up, for the biles having broke and healed, and the man was ſound.

abroad, till forty days after their recovery. The Lord Mayor and officers were appointed to enforce theſe orders and put them in execution, which was ſtrictly obſerved; notwithſtanding which the Plague increaſed more and more.†

From *May* to *June* the diſeaſe was ſometimes in one part of the town, then in another. In *May* there died, in four weeks, 43 of the Plague, and in *June* it increaſed ſo faſt, that in the month there died 590.

On this alarm many of the inhabitants left the town with great precipitation, retiring into the country, to avoid the peſtilence; however this method did not ſave them from the diſtemper, for the other towns and cities were not free from this diſeaſe, which reached even thoſe of the moſt advantageous ſituation and wholeſome air.

In the month of *July* the malignity increas'd ſo, that no leſs than 6137 died. This deſtruction called the magiſtrates again to conſult on ſome new methods to ſtop this cruel devaſtation.

† Certainly the contagion could not ſpread itſelf from thoſe ſhut up in their houſes.

Public

Public prayers were put up, and a month's faſt was appointed. In a little time after the air was refreſhed with moderate breezes, ſufficient to prevent ſtagnation and corruption.* (I ſuppoſe the heat had been very great with ſoutherly winds) but this change laſted not many hours, for in *Auguſt* not leſs than 16536 fell by its rage, on which the king commanded the college of phyſicians of *London* jointly to write ſomewhat in *Engliſh*, that might be a general directory in this calamity. Several of the moſt eminent doctors were ordered to attend the infected, and two of the court of aldermen were appointed to ſee that the phyſicians did their duty. However, notwithſtanding all the care and pains taken to anſwer theſe good intentions, the diſeaſe was no ſooner extinguiſhed in one family than it broke out in many more. Several ſkilful phyſicians voluntarily offered to aſſiſt thoſe appointed, and though the city was almoſt deſerted by the opulent, yet it is almoſt incredible, with what virulence the plague

* Air, like water, ſhould have a continual motion and free current, or it will ſtagnate and corrupt; even the ſea will ſtink in a calm, inſomuch that the ſcaly inhabitants feel its effects, for from the remoteſt depth they are often ſeen to aſcend to the ſurface to ſuck in the circumambient air, to ſave them from deſtruction.

raged amongſt the poor, for in the firſt week of *September* no leſs than 6988 died, and in that whole month 26230 periſhed.

About this time the court was removed to *Oxford*; however, that nothing might be left untried, the magiſtrates and doctors ordered *fires to be made in every ſtreet for three days ſucceſſively*, in hopes to deſtroy, or at leaſt to abate the malignity, but before the three days were expired a heavy rain fell, on which the infection encreaſed.

This experiment, I cannot forbear ſaying, was a very injudicious one, for it was adding fire to heat, or fuel to fire, which corroborates what *Hippocrates* has ſaid, *Heat with moiſture will produce a Plague.*

The reaſon of fires being ordered in every ſtreet proceeded from an opinion founded on what ſome ancient and modern writers have advanced, *viz.* that *Fire will rarify the thickneſs and diſpel the foulneſs of the air.* This holds true in regard to mines, wells, pits, and the like, but not otherwiſe; for the conſequence proved fatal to *Marſeilles* and *London*; in the laſt city there died next night 4000, which was very

very nigh half the number that died in any one week, either before or after.

Permit me to ſay, that I conceive as fire encreaſes heat, ſo by this experiment force was added to the diſeaſe, as ſmiths and all thoſe mechanics who uſe fire in their ſeveral employments, have fatally experienced, they never eſcaping this diſeaſe whenever a Plague attacks any city.

Every method to ſtop this furious invader failing, recourſe was had to chymiſts, quacks, *&c.* and now every one was at liberty to preſcribe what *noſtrum* he pleaſed, and there was ſcarce a ſtreet in which ſome antidote was not ſold, under ſome pompous title; but inſtead of relief being found by thoſe medicines, they killed near as many as the Plague. However theſe ignorant boaſters were ſoon deſtroyed among others, and by their deaths ſhewed the vanity of their pretences.

As no remedy was yet ſucceſsful, a perſon of diſtinction, then in *France*, ſent over an *Anti-peſtilential medicine*, which was to perform wonders. The legiſlature ordered it to be tried with caution; however it being a mineral preparation, as was found out when too late,

it

it cured the diſeaſe, only by laying all thoſe who took it quietly in the grave together.

I believe it would be better for us to have no phyſician, than be crouded with empirics, and cheated by pretended medicines, which have now riſen to number and to reputation ſcarcely ever known in this kingdom before. But he who propoſes a method eſtabliſhed on true mechanical and rational principles, for the preſervation of thoſe that are yet well in the time of a peſtilence, is doing his duty to mankind, and deſerves in ſome meaſure the gratitude of the community, even tho' he ſhould not compleatly attain his purpoſe, for ſuch projects are of great advantage, becauſe they at leaſt raiſe expectations, give room for hope, and ſupport the ſpirits in ſickly ſeaſons.

The ſummer being over and winter approaching, the Plague decreaſed, inſomuch that in the firſt week in *October* only 4327 died, and in the laſt week it decreaſed to 1031; ſo there died in this month 9444. In *November* the number was 3449, which is not much more than one third of the preceding month; and in *December* it was reduced to 736, which is leſs than one fourth of the former month; and

now

now the people grew healthful, for the nature of the diſeaſe was changed, and the air was condenſed by *Cold, the reſiſter of putrefaction.*

Thoſe who had retired into the country now returned haſtily into the city, without fear. The houſes were ſoon inhabited, and the ſhops, which had been ſhut up, were opened, trade went on, and every thing appeared chearful.

Some of the citizens, who before were afraid of their relations and friends, viſited, without dread, the houſes even where the deceaſed had but a little before breathed their laſt; nay, the people were inſpired with ſuch confidence and reſolution, that many went into the beds in which perſons had died, before they were even cold, or cleanſed from the ſtench of the diſeaſe.

The next year was healthy, and little, if any of the Plague was ſeen. *

If this Plague had not been an *infection in the air*, it would probably have appeared the following year with its former fury, ſince the bedding and houſhold utenſils, as well as

* Some aſſert, that 1998 died of the plague in the year 1666. *Vide* the ſecond Journal.

the

the perſons who lay in thoſe beds before they were cleanſed, were as proper receptacles to catch and retain the ſo much talked of *ſeeds of contagion*, as cotton, carpets, thread, handkerchiefs, or the feather-bed of *Foreſtus*.

I may obſerve farther, that according to Dr *Mead*'s account, this Plague was in the ſame year felt in *Kent*, *Suſſex*, *Hampſhire*, *Dorſetſhire*, *Eſſex*, *Norfolk*, *Cambridgeſhire*, *Northamptonſhire*, *Warwickſhire*, *Derbyſhire*, *Newcaſtle*, and other places; ſo that if this diſeaſe had been of an *Ottoman* extraction, the *Turkey* company muſt have had great demands for their goods to ſupply all theſe counties with their contagious merchandize.

However, let us take a ſurvey of the *methods practiſed at* Marſeilles *in* 1720, *to prevent the Plague being conveyed from* Turkey *to them, and to hinder the contagion ſpreading after it had ſeized that city*:

Firſt, to guard againſt the contagion of the Plague being imported, Lazarettos were provided to receive the merchandize, wares, and paſſengers, who at times were to be fumigated with the ſteams of herbs, gums, and ſpices.

The

The ſecond regulation was to appoint iſlands* for all ſhips to perform quarantine at, whilſt the goods in the lazarettos were to continue forty days, the date commencing from the day that the laſt bale of goods was received. Guards alſo were appointed by the magiſtrates over the ſhip, crew, and cargoe; and if any perſon died, their bodies were ordered to be interred very deep, and mixed with quick lime.

As ſoon as the city was infected, the merchandize was cloſe locked up, and proper perſons, as guards, attended, to prevent the ſtore-houſes from being opened. As the ſuſpicions of the Plague increaſed, the magiſtrates of health immediately called at leaſt three of the maſter ſurgeons to examine the perſons ſuſpected of infection, and guards were ſet over their doors, to prevent any from going in or out. The ſheriffs were the officers to ſee theſe orders juſtly executed. If the perſons died, they were immediately interred, and the door of the houſe walled up with lime and ſand; and the ſheriffs were to enquire what perſons had held any communication with the infected, if any, they were removed to a peſt-houſe, and

* The iſlands *Jarre* and *Pomague*.

it

it was capital for any one to remove either the apparel or houſhold goods of the ſick or dead.

The *French*, as well as other nations, well know that the poor in general are firſt ſubject to receive the original attacks of any contagious diſtemper, for a depravity of the blood, coarſe diet, uncleanlineſs, *&c.* contribute not a little to ſuch diſeaſes.

Therefore the next conſideration was how to raiſe money for their ſubſiſtence, as well as many other neceſſaries, ſuch as corn, fuel, and the like, which at ſuch times are hoarded up, to raiſe them to an exceſſive price, which would be ſtarving the poor; therefore to prevent ſuch misfortunes, the magiſtrates publiſh'd an ordinance, prohibiting, under a ſevere penalty, ſuch vile practices, as taking advantage of the indigent in ſuch calamitous times; and then a general review of all the proviſions and fuel was made.

Theſe orders being put in execution, the next was, that all beggars and vagabonds, both domeſtic and foreign, ſhould go out of the town in a few hours, on pain of being whipped and turned out, but this edict was without ef-

fect,

fect, becauſe the neighbouring towns and villages were afraid to receive them; however, they were employed, as porters, to bury the dead.

Meſſieurs *Sicard*, father and ſon, phyſicians, hearing of the calamities of *Marſeilles*, came to the city, and propoſed a method to ſtop the rage of the Plague. This method, like that practiſed in *London*, in 1665, was to put bundles of ſticks, vine-ſtalks and bruſhwood, before every houſe in all public ſquares, markets, croſs-ways, and all along the city walls, which were to be lighted at nine at night. The phyſicians agreed to this expedient, but theſe fires proved ineffectual, for the Plague ſtill increaſed inſomuch, that orders were given out, that a guard ſhould be placed at all the avenues, to prevent any perſon from going in or out of the city. Commiſſaries alſo were appointed to deliver the neceſſary allowances of proviſions, *&c.* to every family.

The five brigades *du Vin*, with their officers, were ordered to ſerve as a guard to the ſheriffs in all expeditions by night, and all militia captains were to form a company of fifty men, to aſſiſt in carrying away the dead and removing the ſick to the peſt-houſes.

The

The number of ſick was ſo great that the *hoſpital* of *charity* was not ſufficient, they therefore were obliged to make uſe of the hoſpital of *Convaleſcence*. Soon after theſe were too ſmall, therefore others were added. It is now made death for any butcher to blow up the carcaſſes with his mouth.

To temper the heat of the town, the ſprings that water'd the meads were now ordered to be turned into the city; from this great act of prudence there was a proſpect of two valuable advantages; firſt of having their fountains well ſtocked, and, ſecondly, of having the ſurplus to waſh away and carry off the filth and naſtineſs from the ſtreets.

In order to bury the dead with more expedition, tumbrels were built to carry off the bodies, and three large ditches ſixty feet ſquare and twenty-four feet deep, were opened without the walls of the city; other ditches alſo near the *Reve Neave*, of the ſame dimenſions, were opened to bury thoſe of the ſuburbs; and an hoſpital was built for the ſick. Theſe works were performed at the ſole expence of the Sieur *Roſe*. An inſtance of public ſpirit that did immortal honour to his name.

All

All the colleges and ſchools were commanded to be ſhut up, leſt the diſtemper might be communicated by the children playing together; and the biſhop ordered all public worſhip to ceaſe in the churches, for the ſame reaſon; and public buſineſs likewiſe was ſuſpended.

The 29th of *Auguſt* notice was publiſhed, that all ſcavengers who had deſerted the town, ſhould return immediately on pain of death; for, by their abſence, the ſtreets were for two months left full of dung and ordure, notwithſtanding the waters from the conduits running through them.

That nothing might be omitted to prevent the diſeaſe from ſpreading by contagion, the coverlids, ſtraw-beds, blankets, wearing apparel, old rags, *&c.* which were uſed for the infected, were ordered to be brought to the public market-place, and burnt immediately. But, notwithſtanding theſe precautions, the Plague increaſed every day, inſomuch that the porters and ſlaves borrowed from the galleys to bury the dead, were almoſt all killed. It was then directed, that the corpſes ſhould be dragged out of their apartments with hooks fixed to ropes

at a great diſtance, in hopes that the diſtemper would not ſeize the porters.

About the 7th of *October*, the Plague was obſerved to be abated in the city, but continued with great fury in the ſuburbs. Guards now were placed at every ſtreet and avenue, to prevent a communication between them; and on the 11th day many recovered in the hoſpitals. Theſe were ordered to be removed into an infirmary appointed for them, and to ſtay there forty days after their carbuncles or plague boils were healed: This they thought neceſſary, to prevent ſuch people from going among others, leſt they ſhould communicate the diſeaſe to thoſe who were ignorant of their condition. There were alſo upwards of 500 poor people and beggars about the ſtreets who recovered of the diſeaſe.

The city growing healthy, and theſe beggars running about; to prevent the danger of the contagion being ſpread by them, the Chevalier *Soiſon* formed a pretty device, to get them ſhut up till their ſores were cured. He appointed a place and a day to give away alms, and gave public notice for it; by which ſtratagem theſe poor objects gathered to the place, when on a

ſudden

ſudden they were ſurrounded by the guards, and conducted into the hoſpital of the curables.

From the latter end of *October* to the 10th of *November*, the Plague daily decreaſed; and it was ſo very mild all over the town, that there were not any freſh infected inhabitants brought to the hoſpitals. The magiſtrates time was taken up in removing all the ſick from the ſeveral hoſpitals into another, cleaning and perfuming the empty beds, preparing new, repairing the houſes, and doing every thing neceſſary to prevent a return of the diſtemper.

On the 26th of *Nov.* the city was ſo free from the diſeaſe, that orders were given out, that no perſon ſhould be admitted into it without proper bills of health, ſigned by the curates, captains, and commiſſaries of the ſeveral towns and ports. Neceſſary ſupplies, ſuch as corn, money, and wood for the bakers, were ſent to the city from his Holineſs, his Royal Highneſs, from *Cevita-Vecchia*, *Toulon*, *Languedoc*, and other places: And now they were permitted to fit out veſſels of their own, to fetch corn and neceſſaries from the *Levant*.

Thus ended the Plague at *Marſeilles*, in five months, dating its firſt appearance from the time of Captain *Gabriel*'s arrival, which was on the 12th of *June*, he being the firſt that came near *Marſeilles* with a foul patent.

I conceive, that from theſe accounts it evidently is ſhewn, that every device poſſible to be invented by the moſt ingenious ſet of men, were inſufficient to prevent this diſtemper from ſpreading, and aſſaulting even thoſe perſons who had taken every ſtep to obviate its malignity: And that theſe expedients, ſo well contrived, conſulted, and put in execution, to extinguiſh the diſtemper, availed nothing, either in preventing the diſeaſe, or putting an end to it: For the infection entirely vaniſhed, not by the art of man, but by the cold weather, (nitrous air) which is brought by the change of the winds.

Since then every invention, contrivance, and ſtratagem, formed by the counſellors and magiſtrates of *London* and *Marſeilles*, were with the ſtricteſt obſervance obeyed and followed, and ſince they were inſufficient to ſtay this diſeaſe; certainly then it will be concluded, that this

peſtilence

did not ſpread itſelf through every ſtreet, convent, ſuburbs, and paſſages by *contagion*, *contact*, or *approach*; and we may henceforth determine, that theſe cities became diſtemper'd by *infection* from inſalubrity of the air.

## CHAP. IV.

*The Riſe and Origin of the Notion that the* Plague *is contagious, and as ſuch capable of being tranſported from one Nation to another, in Goods, Wares,* &c. *together with moſt of the hiſtorical Caſes that have been produced to prove the Doctrine of Contagion.*

THE firſt authority on which contagion is founded, is from *Alexander Benedictus**. He ſays, in the city of *Venice*, a feather-bed that had been thrown aſide in a remote corner of the houſe (being ſuſpected to hold the Plague in it) being ſhaken ſeven years after, ſpread the diſeaſe, of which 5900 people died in twelve weeks.

Another inſtance he gives of the peſtilential contagion ſhut up in a Rag for fourteen years.

* De Peſte, Chap. III.

*Foreſtus**, *Book* VI. *Obſervation* 32. tells us of a young man being ſeized with this diſeaſe, only by thruſting his hand into an old trunk wherein was a ſpider's web, which in an inſtant made a Plague ſore.

Another was ſeized with the Plague by holding a bit of thread.

*Hieronymus Fracaſtorius*, an *Italian*, and *Foreſtus*, both phyſicians, ſpeaking of the effects of contagion, ſay, that about the year 1511, the time when the *Germans* were at *Verona*, the Plague aroſe among the common ſoldiers, from putting on a *leather coat*, and thoſe 25 who put it on died one after another, and 10,000 perſons fell by the Plague before the cauſe was found out. Afterwards the coat was very prudently burnt †.

At *Breſlau* §, in 1542, 5900 died of the Plague in twenty-two weeks. The infection was ſpread by ſome linen that was moved, after it had been laid by for fourteen years.

† *Foreſtus*, on Contagion, *lib.* iii. *chap.* 7.
§ *Senect. de Fibre.*

At

At *Juſtinoples* * in *Italy*, ſome cords that had been made uſe of in burying the dead, at the time of the Plague, being found behind a box by a ſervant, twenty years after; the ſervant was not only infected, but ten thouſand died of the diſtemper.

A woman of *Zealand* removed into *Almeria* in *Germany*, having expoſed ſome cloaths to the ſun, ſome children playing on them received the infection, and all died.

Dr *Hodges*, who wrote on the Plague which happened in *England* in 1665, ſays, he viſited a lady ſeemingly in good health; nay, ſhe had eat a very hearty dinner that day, but died in the afternoon. Her death he imputes to her receiving the infection from his garments, as he had viſited ſeveral ill of the Plague that day.

A man dropt down dead of the Plague by ſtanding on a *Turkey* carpet.

A lady, by ſmelling at a *Turkey* handkerchief, died of the Plague on the ſpot.

* *Trincavet* Lib. iii. Conſil. 17.

Theſe, and ſuch like, hiſtories muſt make every man ſtartle, and doubtleſs are almoſt ſufficient to force us into a belief of their veracity; however, preſently we will ſee how far they are conformable to truth.

To proceed to the riſe and origin of contagion, it appears, that in the time of that great politician Pope *Paul* the third, there happened great diſturbances in *Trent*, on the ſubject of the reformation, in which the diſputes aroſe very high; when his holineſs, in order to bring about his political ſchemes, procured friends to ſpread a report, that the *Plague was at Trent*, and that it was *contagious*; in hopes thereby to get the council removed to *Bologna*. To accompliſh this deſign, the works of *Fracaſtorius* on *Sympathy* and *Antipathy* were made uſe of, and they were conſtrued at this time to ſuit the ſcheme. The bait was ſwallowed and had its effect; the biſhops were frightened and left *Trent*, whilſt the pope's embaſſador, cardinal *Monte*, kept together his friends for a majority.

This artful ſcheme was laid juſt after the carnival; for the pope well knew that the exceſſes

ceſſes of that merry time would cauſe a ſickneſs, and therefore it was the moſt proper ſeaſon for his purpoſe. Many being now ill, the cardinal ſuborned ſome to aſk the phyſicians whether the diſeaſe was not *contagious?* They received ambiguous anſwers, which were ſpread very cunningly, firſt among the meaner ſort of people, with the worſt conſtructions. The Pope's friends alſo raiſed a report, that the neighbouring towns would have no commerce with them, and that *Verona* would not traffick any more with *Trent*. The legates were ſo far from contradicting this falſe rumour, that they held a general council on purpoſe to make a proceſs concerning the feigned peſtilence, and Cardinal *Monte* immediately ordered *Hercules Sevorolo*, protector of the council, to make the proceſs. Theſe proceedings threw the people into great confuſion, and a general congregation was held, in which *Monte* propoſed his ſcheme for the tranſlation of the council, ſaying, he had apoſtolic authority from the beginning for ſo doing.

The *Germans* found out that this pretended Plague was a common fever, and the emperor's prelates oppoſed *Monte*, but it was too late; for the cardinal had for ſome time been inveſted

veſted with a full power for removing the council.

From this account, taken from hiſtory of the council of *Trent*, it does not appear, that they had the leaſt idea of this diſeaſe ever being tranſported from one nation to another. All that the cardinal endeavoured to impreſs was, that the Plague was a contagious diſeaſe. However, from this time, a notion of peſtilential contagion ſpread itſelf, which though of no great antiquity, (it being only from the middle of the ſixteenth century) yet from this period, a foundation, weak as it is, was laid for falſe opinions, repugnant to the ſentiments of the wiſeſt and moſt eminent phyſicians, either of *Greece*, *Rome*, or *Arabia*, who wrote and practiſed before this time. Muſt we then continue in blindneſs, becauſe the pope and his legates, in order to favour a political ſcheme, inculcated the fear of a peſtilential contagion?

The reaſon why the phyſicians of *Rome*, *Italy*, and *France* did not contradict this doctrine then, was, becauſe they did not dare to oppoſe any new-broach'd opinions of an arbitrary ſtate, tho' ever ſo oppoſite to the judgment of the ancient profeſſors of phyſic.

Something

Something ſimilar was the firſt opinion of the *Lues Venerea*; for, in the time of *Henry* the eighth, it was believed that this diſeaſe was contagious, and could be communicated from one perſon to another, by ſitting on the ſame chair, neceſſary houſe, bedding, wiping hands, wearing the ſame apparel, drinking out of the ſame cup, and the like; nay, the notion was ſo prevalent, that edicts were publiſhed to prevent any correſpondence or communication with diſeaſed perſons, and almoſt the ſame precautions were made uſe of for this diſeaſe, as have been ſince for the plague.

However, our reaſon has got the better of ſuch idle conceits in this diſtemper, and I doubt not but common ſenſe will ſoon overpower the opinion of a Plague being conveyed in merchandize.

It is far from an improbability, that this opinion of *contagion* had not died gradually away before this time, had not the late eminent Dr *Mead* reviv'd and endeavour'd to ſupport it, by his *diſcourſe concerning peſtilential contagion*, wherein he aſſigns three cauſes of contagion.

* One of the articles of high treaſon charged upon *Wolſey* was, that having the *French* pox, he preſumed to breathe on the king.

And,

And, though his arguments eſtabliſh nothing, nor can indeed be deemed arguments, yet they are of no ſmall weight with many people, on account of his great credit and high character.

I muſt intreat the favour of taking the liberty to examine into them particularly, and endeavour to ſet before you the miſtakes, which, I humbly conceive, this learned phyſician has fallen into. I hope ſuch an enquiry will rather be thought neceſſary, than in the leaſt impertinent, becauſe the wiſeſt have erred, and men of the ſoundeſt judgment, one time or other, have been miſtaken; and mankind ought to enjoy this ſtage of exiſtence, without diſturbance from falſe and groundleſs terrors.

The three cauſes of contagion aſſigned by the doctor, are the following: 1ſt, Diſeaſed perſons. 2dly, Goods tranſported from infected places. 3dly, A corrupted ſtate of the air.

The 1ſt he endeavours to ſupport by obſerving, that ſeveral diſeaſes are communicated from the diſtempered to others, by ſeveral methods, *viz.* The *Hydrophobia*, by a bite; the *Itch*, by ſimple contact; *Lues Venerea*, by cloſer contact; the *Meaſles*, *Small-pox*, and *Plague*, by a cloſer approach to thoſe ſick of theſe diſtempers.

He

He then explains the methods, and expreſſes himſelf in theſe words: "In all peſtilential "diſeaſes the blood continually throws off a "great quantity of active particles upon the "ſeveral glands of the body, mouth, and ſkin, "which, being received into a ſound body, are "apt to communicate the ſame diſeaſe; for the "contagious particles being ſucked in with the "air, taint, in their paſſages, the ſalival juices, "at the time the ſound perſon is in a ſtate of "inſpiration, and, being ſwallowed down into "the ſtomach, ſoon fix their malignity in that "part; or the blood is affected by ſuch ma-"lignant particles being mixed with it in the "lungs."

Many men, truly eminent for their learning and enquiries, have long entertained an opinion, that by *expiration* an infection may be *communicated*, and by *inſpiration* may be *received*, whenever one perſon approaches to another, but not otherwiſe; for how can it be ſaid that any one can receive the ſmall pox by *contagion* from the ſmall pox hoſpital, when he never was within a quarter of a mile of the houſe? Therefore contagion can only hold good, or be ſupported, as from *perſon to perſon*; but then

ſuch

ſuch arguments have no affinity or connection with *foreign goods*, neither can they ſupport a ſuppoſition of a Plague being imported in *cotton*, or any other ſpecies of merchandize.

This conceſſion is confined to *contagion*, *contact*, or an approach to the diſtemper'd; and only admits, that a diſeaſe may be received by viſits, cohabitation, and the like; which I readily confeſs.

Again, he endeavours to ſupport his opinion of *goods tranſported from infected places, and conveying the Plague to other conntries*, by the the old practice and univerſality of performing quarantines; and tells us it is a ſtrong argument of the infection being communicated to the remoteſt regions.

I conceive this is not a proof ſufficient to ground a belief upon; for it has never been proved, that the inſpectors of goods put into Lazarettos have received infection.

However, two inſtances are recited by this gentleman, in hopes of ſtrengthening this notion of contagion. The firſt is of the Plague entering *Rome*, in 1656; which it is ſaid was con-

conveyed thither from *Naples* by cloaths and other wares from that place, brought firſt from Port *Neptuno*, and carried from thence to the neighbouring caſtle of St *Lawrence*; which, after being kept ſometime there, were conveyed into *Rome*. This hiſtory is taken out of *Gaſtaldi*, on the Plague, *page* 116.

Now let us ſee how conſiſtent this aſſertion is with reaſon.

I have before related that the Plague raged in 1656 at *Naples*; and here it is ſaid, that it broke out at *Rome* in the ſame year, by infected goods, on which the Doctor's argument depends.

In the beginning of this enquiry it has been ſhewn, that the Plague, at the ſame period of time, has not only raged in different countries, but in remote kingdoms. Can it therefore be abſurd to believe, that the Plague broke out in *Rome* at the ſame time as at *Naples*, ſince both cities are on the ſame continent, and not many leagues* diſtant from each other? Beſides, the

* *Naples* is placed in the latitude of 41 deg. 45 minutes,
*Rome* —— —— 42 —— 8
Difference 00 23

air

air is much the ſame, there being but 23 miles difference in latitude; both are ſubject to annual viſitations by epidemical diſeaſes, and thoſe too of the ſame nature; even their endemial diſorders are of the ſame ſpecies. Beſides, *Gaſtaldi* does not diſtinctly prove the fact recited by Dr *Mead*. Nay, I ſhall ſhew you, that *England*, *France*, and moſt nations are viſited every year with the Plague, in ſome degree.

The ſecond inſtance is from a journal of the Plague at *Marſeilles*, which the Doctor gives in the following words:

" It appears indiſputable, by this account, " that the miſchief was brought thither by " goods from the *Levant*; for the firſt who " had the diſtemper was one of the crew of the " ſhip which brought thoſe goods from the " *Levant*. The next were thoſe who attended " upon the goods, while they were under qua- " rantine; and ſoon after the ſurgeons whom " the magiſtrates at *Marſeilles* appointed to ex- " amine the bodies of thoſe who died."

I have ſtrictly ſearched the journals of the Plague at *Marſeilles*, and muſt diſpute the exactneſs of this *indiſputable account*, as he calls it, and

and the more carefully, as it is the chief ſupport of his opinion.

*The following is an Abſtract from the Regiſter of the Council Chamber of the Town-houſe, kept by Monſ,* Pichatty de Croiſſant, *Counſellor and Orator of that City of* Marſeilles, &c. *publiſhed by the* French *King's Authority:*

THE 27th of *May*, a ſailor belonging to Capt. *Chautard* died. The intendants ordered the corpſe to be carried into the Infirmary; the chief ſurgeon, Monſ. *Guirard*, examined it, and reported, *that it had not any marks of contagion.*

The 12th of *June*, being 15 days from the death of the ſailor, an officer, whom the intendant had put on board Capt. *Chautaurd*'s ſhip, to ſee quarantine duly performed, died there. Monſ. *Guirard*, chief ſurgeon of health, examined the body, and reported, *it had not any mark of contagion.*

The 14th of *June* the paſſengers who came in the ſame ſhip were allowed to enter the city as uſual. This makes it indiſputable, that the

magiſtrates were convinced, that the ſhip was healthy at this time.

The 23d, a cabbin boy of *Chataurd*'s, a ſervant employed at the infirmaries, and one belonging to Captain *Gabriel*, all died. The report was made as before, *that they had not any mark of contagion.*

The 26th. The ſhips of Capt. *Chataurd*, *Aillauds*, and *Gabriel* were ordered to a diſtant iſland called *Jarre*. Alſo on the 28th, Captain *Gueymert*'s veſſel, which arrived from *Sidon*, was ordered to the ſaid iſland.

The 7th of *July* two ſervants ſhut up to purify the goods of *Chataurd*, fell ſick, (but it is not mentioned that they died). Tumours were found in their groins, and the ſurgeon gave in his report, *that he did not believe they had the Plague.*

Soon after (but no time mentioned) Monſ. *Guirard*, chief ſurgeon of health, died. On the 8th inſtant a ſervant fell ſick, and a ſurgeon being appointed, found a ſwelling on the upper part of the thigh, on which a conſultation of three ſurgeons was held, and they reported, *that they all had the Plague.* Alſo

Alſo on the 9th of *July* two phyſicians, Meſſieurs *Peiſſonel* and ſon, ran to the town-houſe, and acquainted the ſheriffs, that in the ſquare of *Lynch* one *Eiſſelene* appeared to them to have the Plague, of which on the 10th he died, and alſo on the 11th one *Boyal.*

*July* 21. Nothing of the Plague having ſince the 11th, been diſcovered in the town, they wrote it with joy to the council of marine, and provided for the ſubſiſtance of ſuſpected perſons, whom they had taken up and put into the infirmaries, as well as thoſe confined by order to their houſes; and the people were well ſatisfied, that the two perſons were carried off by another diſtemper than the Plague.

The 26th of *July* notice was given to the ſheriffs, that in the ſtreet of *Leſcalle*, a part of the old town, inhabited only by poor people, (ſomewhat like part of St *Giles*'s) fifteen perſons were ſuddenly fallen ſick. Phyſicians and ſurgeons were diſpatched thither, to examine into the diſtemper. Some of them reported that it was a malignant fever; others a contagious or peſtilential fever, occaſioned by bad food, which want had long forced thoſe poor

creatures to live upon. However, not one of theſe gentlemen ſaid it was the Plague; and being again on the 27th examined, declared, that the diſtemper proceeded from unwholeſome food.

Strict enquiries were made by the ſheriffs, to diſcover all perſons who had communication with thoſe dead and ſick, and even thoſe ſuſpected before this time, were ſent to the infirmaries. Not one word, at this time, is ſaid of the bearers of the dead receiving the diſtemper, although it is well known, that they, in times of peſtilence, greatly ſuffer.

Theſe are the material particulars mentioned on this affair; if then you will conſider this abſtract with the doctor's arguments, probably it will afford more ſatisfaction than his account, if not repeal the doctor's mode of cramming us with conceits. For it does not appear that any goods were ſtowed near this ſtreet *Leſcalle*, nor that theſe perſons had any thing to do with *Chataurd*'s effects, for this ſquare is in the meaneſt part of the city, the very place where the Plague ſhould break out; for it has long been known, that this diſtemper firſt ſhews itſelf among the poor, not only from unclean-

lineſs,

lineſs, but from a depravity of the blood; for ſuch habits of body are unable to withſtand the attacks of violent diſtempers, becauſe their fluids are more prone to putrefaction; conſequently when any diſtemper is in the air, the poor (the weakeſt firſt) feel its effects.

Something of a much more mild diſpoſition than the Plague, happens to us in *England* yearly, from the inclement and unſettled weather, I mean what is called *catching a cold*. Thoſe who are firſt diſordered by it are children and old people, for the ſame reaſons that I have given, and it has been obſerved, that theſe are very early attacked with the Plague.

Dr *Keil*, in his *Sanctorian Experiments*, has demonſtrated what is generally expreſſed by *catching cold*. He ſays, it is not owing to a bare conſtipation of the pores, but to ſome hurtful particles imbibed with the air; and that it is not to be cured but by a ſenſible evacuation by ſweat, urine, ſtools, &c. This diſeaſe is obſerved by moſt houſe-wives, for its annual viſitation; and accordingly the country dame adviſes her treacle poſſet for the like evacuations. She alſo can obſerve, that the lips, noſe, and ears, in a day or two after, are frequently beſet

with irruptions, which are nothing leſs than criſes of this fever, cauſed by an ill ſtate of the air; and ſuch breakings out may be called carbuncles, in the minuteſt ſtate, they bearing great analogy to thoſe of the Plague, in reſpect to heat, inflammation, diſtention, and diſcolouring of the parts diſordered.

But, to proceed, it is neceſſary to take notice that the month of *July* is the ſeaſon for the Plague; alſo that the paſſengers of Capt. *Chataurd*'s veſſel, continued healthy, as well before as after they were permitted to go about the ſtreets; that when the ſhip left *Turky*, which was the 31ſt of *January*, no Plague had broke out in that country, and that he came away with a bill of health. He touched at *Leghorn*, where, during his ſtay, and on his voyage, ſix men died, and produced to the intendants of health at *Marſeilles*, a certificate from the phyſicians and ſurgeons of health at *Leghorn*, that theſe men died only of malignant fevers, cauſed by unwholeſome proviſions. I wiſh this diſeaſe, from the ſame cauſe, had never been felt in our fleets in the laſt war. However, prejudice laid this diſtemper wholly to *Chataurd*'s ſhip.

It ſeems ſtrange then, that a ſhip ſhould be charged with importing an infection, when neither the place at which ſhe took in her loading, nor the paſſengers or ſailors ſhewed any ſign of their being afflicted with this malignant diſtemper. The other ſhip (*Guemart*'s) could not import it, becauſe ſhe was not permitted to enter the port of *Marſeilles*. Surely then this diſtemper aroſe from the ſame cauſe as that which gave riſe to it when the city was attacked in the years 1580, 1630, 1649, and 1650, which I ſhall now ſubmit to the conſideration of every candid reader; only let it be remembered, that Captain *Chataurd* arrived at *Marſeilles* on the 25th of *May*, and no diſeaſe was abroad till the 8th of *July*. Alſo, by the certificates mentioned, the Plague did not ſhew itſelf till after the 26th of this month.

*I come now to ſhew the third cauſe aſſigned by Dr* Mead, *for ſpreading the Plague*, a corrupted ſtate of the air.

This exactly agrees with the ſentiments of all the wiſeſt and moſt learned writers, from the time of *Hippocrates* down to the middle of the 16th century, for they knew of no other cauſe.

Therefore, in this opinion, rightly underſtood, I have the pleaſure to concur with this great man, which I ſhall explain when I come to ſpeak of the nature, cauſe, and origin of the Plague.

The doctor's writings in general I allow to be maſterly and juſt, but ſuſpect, that his diſcourſe on the Plague was wrote without that deliberation neceſſary for ſo weighty an affair. ſince to ſuch an undertaking tranquillity of mind was neceſſary, as well as a thorough intimacy of the nature of the diſtemper.

Now the Plague in any city may be received from one perſon by another, by *contact* or *contagion**. But *infection* is of a different nature, for it is a reigning diſeaſe, ſpreading itſelf to the inhabitants of that part of the country when the diſeaſe is rife, by the inclemency of the air. Hence it follows, that moſt perſons who breathe the ſame air are ſubject to the

* Contagion muſt not be confined to the Plague only, for we have had many fevers in *England* that were of this nature, in particular, the new diſeaſe (as it was called) or the *Morbus Epidemius* in 1643, yt this fever was not the Plague. It was diſtinguiſhed thus, *Febris putrida, continua, maligna, et contagioſa.*——Vide a pamphlet publiſhed in 1643, by command.

ſame

ſame diſeaſe, and this is truly *infection*; for hot and moiſt air, with ſoutherly winds, are *cauſes*; the Plague, the *effect of thoſe cauſes*, and theſe effects are common to all; therefore that air which breeds the Plague, muſt not be ſaid to propagate it by *contact*, but by *infection*. This is the proper diſtinction, I apprehend, between *contagion* and *infection*.

Though *Fracaſtorius* was the firſt that wrote on peſtilential contagion, founded on ſympathy and antipathy, from whence he deduces it, all that can be underſtood from his works, amounts to no more, than that the Plague, ſome fevers, the ſmall-pox, *&c. when rife*, are contagious; and that they will ſpread themſelves to thoſe whoſe bodies are pre-diſpoſed to receive the infection, provided an approach or contact is made. This is widely different from ſaying that *an endemial or country diſeaſe can be brought over from foreign climes*, and I am convinced he never meant any ſuch thing.

If he was alive at this time, I believe he would not diſagree with me, in believing, that the Plague from *Turky* cannot be received nor propagated in *England* by merchandize, unleſs our *air* ſhould abound with the ſame heat, moiſture,

moiſture, and principles, as the air in that country, no more than the fruits of *Egypt* can grow and arrive at perfection in our fields and hedges, and for the ſame reaſons.

I grant that by art we can produce ſome of their fruits, but then they fall as far ſhort of their natural deliciouſneſs, as our annual autumnal fevers are of the vigour of a Plague in hot countries.

*Mercurialis*, who lived at this time, and taught phyſic in more univerſities in *Italy*, than any one, and with greater encouragement, till the end of the 16th century, at firſt, ſpeaks of the novelty of a diſeaſe paſſing from one perſon to another, and with good manners regarding the ſafety of his perſon, *wonders why the ancients had not made any declaration, that the Plague was contagious*; yet his arguments are very ſtrong againſt ſuch notions of contagion.

We ſee here, that this eminent phyſician even doubts the *effects of contact*, and had no thoughts of an infection being conveyed from one nation to another.

*Euſtachius*

*Euſtachius Rudius*, another learned phyſician, has expreſſly ſaid "He could not conceive "how the Plague could be tranſported in "goods, or that it otherwiſe ſhould affect us, "than by infectious particles mixed firſt with "the air, and thereby conveyed when we "breathe." This opinion will not agree with conſtituting quarantines, *&c.* becauſe no boundaries can prevent any diſeaſe from ſpreading, that is either made, propagated, or conveyed by the air.

*Ludovicus Septalius*,* a noble phyſician, affirms, poſitively, that *the manner of conveying infection by a Fomes was unknown to the ancients, and was never thought of by them.*

*Sanctorius*, who wrote in 1614, and has been called the Father of Phyſick, ſays, "We "are infected with the Plague, not by the "touch, but by drawing in the peſtilential air "with our breaths."

Dr *Robert Brooks*, who in 1721 publiſhed a hiſtory of the moſt remarkable peſtilential diſeaſes that had ever happened, ſays, that *the Plague takes its riſe from poiſonous air*, which will be fairly proved in the enſuing pages.

* *De Peſte et Peſtiferis Morbis*, Milan 1622.

# CHAP. V.

*The various Opinions of Authors, concerning the ſeveral Things pre-requiſite to the Propagation of the* Plague ; *their Notions confuted, with a true Deſcription of the Nature, and Cauſes of a Peſtilence,*

THIS diſeaſe is very juſtly deſcribed as one of the worſt kind of fevers, ariſing from a poiſonous *miaſma* in hot and ſultry countries, which proves mortal in a day or two. It differs from other malignant and dangerous fevers, and is almoſt peculiar to eaſtern nations. As it ſprings from an inſalubrity of the air, it ſeldom terminates, like other fevers, by ſweat, flux, or other evacuations. Sometimes indeed the poiſon is forced out critically into the external glandular parts, forming tumours (called *buboes* and *carbuncles*) which when they happen, prove ſalutary ; but ſuch happy events or criſes fall out only to thoſe who enjoy vital motion in great force and vigour.

This is the diſeaſe, and this the nature, of which ſome late writers inform us, that the ſubtle

ſubtle quality will adhere to porous ſubſtances, ſuch as cotton, mohair, and animal coverings, all or any of which are capable of conveying its malignity to other countries; and that the contagion ſo propagated is of force to poiſon every nation, where commerce is carried on; ſo that, according to this doctrine, *England* is as ſubject to receive the diſeaſe by traffick as *Marſeilles*, *Egypt*, *&c.*

But none of theſe writers, even Dr *Mead*, have ſo much as given one inſtance of the truth of ſuch aſſertions, nor have they attempted to prove it; and, for my own part, I believe this opinion no leſs abſurd than the various cauſes aſſigned by them of the origin of the Plague, for which ſome of them have accounted from aſtral influences, and malign conjunctions of heavenly bodies.

Thoſe who have talked rather more intelligibly, have derived this diſeaſe from the ſtench of putrifying fiſh, or of ſtagnant waters in large lakes.

Others ſpeak of ſteams and exhalations from putrifying bodies, after great battles, where the dead have not been buried; of which they

give

give many hiſtories, even from the *Punic* war, delivered down to us by *Julius Alexandrinus*, *Diodorus Siculus*, *Parey*, and other writers.

It is certain, that later times furniſh us with hiſtories of malignant fevers raging in armies; but theſe diſtempers, though contagious, are not the Plague, for they are diſeaſes of the camp, and in no wiſe epidemical, for their cure conſiſts in removing the troops, and then the ſurvivors become healthful.

*Galen*, *Foreſtus* and *Joſephus*, ſay, coarſe diet and unripen'd fruit propagate this diſeaſe; and they have obſerved that a Plague follows a famine.

Some modern writers have charged ſubterraneous fires, mineral and bituminous ſubſtances, and ſteams or damps from mines, *&c.* with producing peſtilential diſeaſes, and then tell us, that *La Grotta del Cani* can kill birds and dogs by its exhalation.

I hope no one of my readers can be ſo weak as to believe, that any of theſe cauſes have ever brought the Plague. It is true, that *miners* are ſubject to diſtempers, but they ariſe from their employ-

employments; and moſt artificers have diſeaſes peculiar to the trades they profeſs.

Since then theſe are the general cauſes that have been commonly aſſigned, and as ſuch wild ſuppoſitions, however diſguiſed under philoſophy, deſerve little notice, I ſhall offer an opinion ſomewhat better founded on mechanical reaſoning, and, I believe, more ſatisfactory.

I hope it will not be thought abſurd, that I aſſert, that *hot and moiſt air will produce the Plague*, and that *Peſtilences are brought by unſeaſonable moiſtures, heats, and faint blaſts of wind.*

*Hippocrates*, *Galen*, and the beſt writers confirm this opinion; for they have ſaid, that *a hot ſoutherly wind, with moiſture, brings this diſeaſe.*

This conſtitution of the air is the mother and nurſe of the Plague; it not only breeds but nouriſhes the diſeaſe, and wafts it to the neighbouring towns.

The malignity increaſes according to the degree of heat and moiſture; its duration continues as long as theſe winds faintly blow, and it diſappears as ſoon as the air is changed.

It

It has been allowed for ages, that the ſun, cold winds, &c. have great influence over human bodies, for they produce an intemperate climate * ; therefore all the *Turkiſh* dominions, as *Conſtantinople*, *Aleppo*, *Scanderoon*, *Smyrna*, *Salonica*, *Egypt*, *Grand Cairo*, and the neighbouring cities, are moſt ſubject to this diſtemper, at particular ſeaſons, but never through the whole year. It is a miſtake to imagine it reigns continually, for the ſeaſon in which it ſallies forth is the ſpring, ſometimes ſooner, ſometimes later, as the ſoutherly winds ſet in, and it continues to the latter end of *July* or *Auguſt*, at which time the wind changes to the north-eaſt, as ſoon as they come on the Plague ceaſes.

Thus, the Plague at *Venice*, in 1348, began in *March*, and ended in *Auguſt* ; and that at *Marſeilles*, in 1720, began in *May*, or the beginning of *June*, and continued about five moſths; that of *London*, 1665, began in the 2d week of *May*, and not before, for in this week

* *Thucydides* ſays the Plague of *Athens* began in *Upper Æthiopia*, came thence into *Egypt*, ſpread into *Perſia*, and afterwards into *Greece*.——*Pliny* ſays, the Plague travels from the ſouthern parts of the world to the weſtern.

*nine died*, and only two from the 20th of *December* to this date.

The ſeaſon of this diſeaſe is when the ſun is returning from the ſouthern hemiſphere, and approaches near the equator, which is in *March*; at which time the ſouthern winds ſet in. The inhabitants of *Egypt* call theſe gales *Campſin*, from *Campſis*, a mighty general, who was, with his whole army, deſtroyed, by the ſand driven over them.

When theſe winds blow from the ſouth, they are firſt warm, ſoon after very hot and parching; and not only ſo, but they gather, in travelling over the vaſt continent of *Africa*, all the unwholeſome effluvia of ſtagnating lakes, as well as thoſe of cadaverous animals and vegetables, which die and rot upon that tract of land; all which they waft and convey to regions ſubject to their blaſts, as *Egypt*, *Turkey*, *&c.* where meeting with a diſpoſition to putrefaction, on account of the moiſture of the atmoſphere, it powerfully affects thoſe that reſide and reſpire in it; for the active putrid ſalts and attenuated oils finding a way into the body by the pores, lungs, and ſtomach, diſpoſe them to the ſame kind of putrefaction as that which

deſtroy'd the bodies from whence they were exhaled: thus a morbous and diſtemper'd conſtitution of the air prevails, and conſequently the Plague.

About *Auguſt* its malignity diſappears, becauſe in this month the northern gales come on; as they are cool winds, they temperate the heat of the atmoſphere, for which reaſon they have long ſince been celebrated for their ſalubrity, particularly by *Hippocrates*, *Lucretius*, *Galen*, *Pliny*, *Proſper*, *Alpinus*, and others.

It muſt be obſerved that theſe winds did, and now do, blow from the north-eaſt; and it is, and always was, remarkable, that when theſe cooling winds viſited them, at, or about the riſing of the dog-ſtar, and continue about forty days, thoſe nations are not that year viſited with the Plague, or but very ſlightly.*

On the contrary, when theſe winds do not blow at all, or are often interrupted, the Plague never fails to ravage thoſe countries more or leſs, in proportion to the defect of theſe winds.

ogstar deified as Anubis, syn. with Asculapius
eptured as treading on the serpent Typhon
e while he was visible in Egypt the Northern
tesian winds prevailed, & the ground being
ed with the inundation of the Nile no
aria arose & Plague ceased.

I ſhall

I ſhall ſtrengthen what I have advanced with what *Hippocrates* has ſaid, in deſcribing a peſtilential ſummer, *viz.* **The ſummer was calm and hot, and the ſeaſon ſultry, the Eteſian winds blowing by weak and ſcattter'd blaſts.*

*Proſper Alpinus* alſo ſays, that at the riſing of the north winds, which happen nearly at the time when the *Nile* begins to increaſe, all peſtilential diſtempers which were before very rife and common, are at once extinguiſhed.

*Galen* (Book iv. on Temperaments) ſays, that all things are preſerved for a long time from putrefaction by the north winds, which are naturally cold and dry; and he aſſures us, that ſuch winds induce a healthy and ſalubrious ſtate of the air; for if the Eteſian winds blow in the ſummer, they prevent many diſorders which otherwiſe would happen; ſince it is well known, that the north winds abound with *acid, the great reſiſter of putrefaction*; and theſe winds alſo purge the air, and make it wholeſome.

* *Ætas ſerena erat et calida, magni erant æſtus, Eteſiæ parvæ deſperſim ſpirarunt.*

It is therefore evident, that the Plague ſeldom or never rages all the year; if it ever did, or ſhould, it muſt proceed from a continuance of the ſoutherly winds, and the abſence of the *Eteſian gales*.

The late eminent *Frederick Hoffman* enables us to account for the ſalubrity of the northern winds, with the higheſt appearance of truth. This great writer informs us, from his own knowledge, that the manufacturers of nitre obſerve at their works, that the beds of earth prepared for the reception of that *acid of the air*, which conſtitutes the very eſſence of the nitre, are impregnated with this acid principally, or ſolely, whilſt the winds blow from the points of the compaſs between the *north* and *eaſt*; and theſe winds are remarkable, I think, all over the northern hemiſphere, for cooling the air.

By theſe winds, then, the air of *Egypt* is cooled and repleniſhed with an *acid*, the cold not improbably the conſequence of the acid, which we have before mentioned, as the great preſervative againſt putrefaction, and conſequently contagion.

It

It is ſurely an apparent and inconteſtible act of providence, that ſends the *Eteſian winds* at this ſeaſon, when the moiſture with which the overflowing of the *Nile* impregnates the entire atmoſphere, renders all bodies eminently ſubject to putrefaction, and conſequently an antidote or preſervative is particularly neceſſary. I ſhall ſubmit this my opinion on the cauſes of peſtilential diſorders, and now proceed to ſhew my reaſons againſt the poſſibility of the Plague being brought from *Turkey* to *England*.

After a ſtrict enquiry, I cannot find that either the *Greeks*, *Arabians*, or *Italian* phyſicians, have ſaid one word of the *Plague ever being tranſported from one nation to another, in any ſort of merchandize*.

It is certain, they were the moſt curious compilers of medical hiſtory; therefore, if any ſuch thing had happened at any time, it could not poſſibly have eſcaped their notice; for facts of this nature are too obvious to paſs unobſerved by men leſs curious in obſerving the cauſes of diſeaſes.

*Rhazes* and *Avicenna*, *Arabian* phyſicians, are ſilent on this head, although the former

practiſed near 100 years; and *Mercurialis* ſays, "After I had made a moſt particular ſearch among the writings of ancient phyſicians, for the Plague being communicated by a fomes, I never could diſcover any ſuch thing among them." *

If we ſearch into earlier times we ſhall find that the *Turks*, *Perſians*, and *Arabians* wore ſilk, cotton, and furrs; that they traded in theſe commodities all over the *Indies*, and great part of *Europe*; and yet we cannot learn that any ſuch fatal commodity as the Plague was ſold with their goods.

*Naples*, *Sicily*, *Genoa*, *Germany*, *Flanders*, *Copenhagen*, *Stockholm*, *Holland*, and *Amſterdam*, have all been attacked with the Plague, and we have received many ſhips from thoſe places laden with linnens, flax, hemp, *&c.* at thoſe ſeaſons, yet no ill conſequences followed, tho' their voyages were performed in a leſs time than from the *Turkiſh* empire. Certainly then, if the ſeeds of contagion could be ſo conveyed, we ſhould have received them very warm, and

* The affair of *Trent* very probably made him curious in examining into what *Fracaſtorius* wrote, and what the Pope's embaſſador had publiſhed.

more

more eſpecially in thoſe days when no quarantine was uſed.

The firſt *Europeans* that traded with the *Turks*, were the *Venetians*: They had no notion that the Plague could be received in traffick, till very lately, that is, till the affair of *Trent*, tho' they continued their commerce for a long ſeries of years, and grew very rich.

About 160 years ago our *Engliſh* merchants entered into the *Turkey* trade, ſince which it has not been fairly proved by Dr *Mead*, or any writer, that the Plague was ever brought from thence.

Some of our merchants have reſided long in thoſe countries, even when the Plague raged with great violence at *Aleppo*, *Scanderoon*, *Smyrna*, *Conſtantinople*, *&c.* and made vaſt devaſtations, nay before the year 1665. Surely then, if it could have been at all brought over, theſe early periods were the moſt probable ſeaſons for ſuch misfortunes, becauſe the nation did not guard againſt the infection, as now, for we had no apprehenſions of its being conveyed in goods.

About 37 years ago the Plague at *Aleppo* carried off 90,000 in *half a year*, but we never perceived any effects of it here, tho' ſeveral ſhips arrived with cotton, &c. from that port.

Before the Plague in *London*, we imported many thouſand bags of cotton, and ſince that time ſome millions, even from infected places, yet we have never heard that any enquiry of this kind was made; and even the bale of cotton, ſo much talked of in 1665, as having conveyed the infection into *London*, is not uncontroverted, for we are told, that *the king being in council was informed, that the preſident of the Royal College of Phyſicians affirmed, that the Plague began in St* Giles's, *by flax.*

It is very probable that this was the place where the Plague firſt appeared, ſince the poor in all nations are firſt afflicted; for unwholeſome meats, drinks, tainted fleſh, ſtinking garbage, and uncleanlineſs do not a little contribute to the propagation of peſtilential diſtempers; for, whenever there is a diſtemperature in the air, the humane body is, by theſe cauſes, pre-diſpoſed to receive the infection.

The

The poor were always the firſt ſufferers in all countries, if you believe the learned, becauſe their fluids are poor and weak, and conquently the ſolids leſs able to reſiſt putrefaction.

Accordingly, Mr *L'Eſtrange* takes notice, that the Plagues in 1625 and 1636, broke out in *Whitechappel*, a probable place, not only from the poor in that neighbourhood, but from the ſlaughter-houſes, ſince more beaſts are killed there than in any other pariſh in *London*; and conſequently more animal filth and naſtineſs is there to be found.

I know that the Plague is generally believed to have been brought to *Marſeilles* in a *Turkey* ſhip, and the people in *England* believed it, not only at that time, but even now, for it was then, and is to this day ſaid, that *a bale of cotton introduced the infection.*

The firſt ſhip ſuſpected of importing the contagion to *Marſeilles* came from *Sidon*, *Tripoli*, *Syria*, and *Cyprus*. She was commanded by Capt. *Chataud*, and arrived on the 20th of *May* 1720. Her patents or clearance certified, that there was no contagion in thoſe places; ſhe

ſailed the 31ſt of *January*, which was before the Plague broke out in any of them, for which reaſon ſhe had a healthy patent, it being at leaſt a month before the Plague uſually appears in thoſe countries; and I conceive it will be granted, that if a ſhip loads at a port free from a Plague, ſhe cannot receive an infection by contact. Dr *Dedier** ſays, *none of the goods of the other ſhips before-mentioned, not ſo much as a bundle or parcel, were brought into Marſeilles*, conſequently the Plague could not be conveyed from thoſe ſhips, even if the diſeaſe had been on board.

Meſſ. *Chiconeau*, *Verny*, *Soulier*, and *Dedier*, all very eminent men in phyſic, publicly declared againſt the poſſibility of the Plague being tranſported in goods.

The Plague I am ſpeaking of, began among the poor, and its firſt appearance was on the 9th of *July*, ſix weeks after the firſt ſhip's arrival.

* This gentleman was an eminent phyſician of *Montpelier*. He was ſent by order of the Dauphin, with the Doctors *Chicoyneau*, *Verny*, *Pons*, *Bontelier*, and three ſurgeons, *Soullier*, ſurgeon to the king, *Montet*, and *Rabbaton*, to examine into the nature and ſymptoms of this diſeaſe in *Marſeilles*.

This

This narrative would incline one to believe, that the Plague of *Marſeilles* was neither brought nor propagated by any merchandize from *Turkey*; but it aroſe from an *inſalubrity of the air*.

*Sanctorius* could never conceive that the Plague could be conveyed in goods, and ſays, "The infection can laſt only ſo long as the re-"mote or immediate cauſes ſubſiſt; for if "any one of them fails, the malignity ſtops, "as the movement of a clock ceaſes, as ſoon "as there is a failure in the ſmalleſt tooth of "any of its wheels."

I cannot therefore give up my own opinion to a late author * who has, by his authority, countenanced the relation of the riſe of the Plague from *cotton imported*. We are ready to ſwallow *French* modes and *French* tales, and I am apt to believe, that this wonderful conceit was imported from the *French*, and that this is the only Plague ever brought to us by men and apparel.

Suppoſe a ſhip took in her lading at any port, at the time when the Plague raged there,

* *Dr Mead.*

(which

(which, I am certain, has often been the caſe) and ſuppoſe too that the merchandize had imbibed the contagion at the time when it was put on board; if it ſhould be ſo circumſtanced, we ſhould be all frighted at the entrance of ſo dangerous a gueſt, but to be frighted would be our only evil; for it is evident, that it muſt be impoſſible for the Plague to be ſo conveyed to us, becauſe it is of a nature contrary to the diſpoſition of our climate; for, during a great part of our ſummers, we have either northerly winds, that are in their nature very dry, and of a nitrous quality, which is very healthy, as phyſicians have obſerved, or accompanied with moiſture and continued rains: But even then, the gales proceed from the north and weſtern parts, and ſuch rains are different from the damps or wet weather in *Turkey*; for in thoſe countries the rain falls after great draughts, in haſty ſhowers, and is ſucceeded by ſcorching heats, and ſoutherly winds.

It muſt be granted, that we are ſituated in a very unſettled climate; the winds never continuing long in any quarter; nor is our weather certain for months together, like that of *Turkey*, where they have but two regular ſeaſons, (ſtated winds) one of near eight months, with

continual north-eaſt gales, and the other with ſoutherly winds.

Beſides, we have no *deſarts*, *great lakes*, *ſwamps*, or *extenſive rivers*, in our neighbourhood, nor *high barren mountains*, *ſcorching ſands*, or *ſpacious wilderneſſes*, inhabited by wild beaſts, innumerable reptiles, inſects, *&c.* in which they periſh. Neither do our herbage rot and ſtink on the ſurface of the earth, conſequently our atmoſphere cannot be pre-diſpoſed to receive and nouriſh ſo unwelcome a gueſt. For the very ſame cauſe which hinders the plague from continuing all the year in any one city in *Turkey*, prevents its entrance into *England*. But here the air abounds with nitre, the chief *reſiſter of putrefaction*. Beſides, we want that intenſe heat with moiſture, which is neceſſary to putrefaction; for, without theſe agents, *heat and moiſture*, nothing can putrify.

I have ſaid before, that heat rarifies all bodies, more or leſs; it weakens the contact of ſubſtances, leſſens the coheſions, and gives ſpace for moiſture to penetrate them, both which acting at the ſame time, prepare bodies for ſolution and putrefaction.

Indeed

Indeed *England* would be as ſubject to the Plague as *Grand Cairo*, if it was ſituated in a neighbourhood of the ſame nature. But this cold latitude defends us from frequent and violent peſtilencies, by affording us an air of almoſt the ſame nature as that which attends the *Eteſian blaſts*, which are remarkable for checking and extinguiſhing all peſtilential diſeaſes, in every part of the world.

If the Plague cannot ſhew itſelf in its mother country, when the air is fanned with north-eaſt blaſts, certainly it cannot gain admiſſion in that clime, of which the atmoſphere abounds with principles ſo directly oppoſite to its nature.

This iſland has, indeed, variety of ſeaſons, but they are all colder than thoſe in *Egypt*, and our lands are every where better cultivated. We have no woods to ſcreen the ſun from the earth, nor moiſt exhalations to poiſon the atmoſphere; and therefore, when I am convinced, that the natural inſects of thoſe countries can live, breed, and enjoy health in *England*, I then ſhall believe, that mohair and cotton may convey the Plague to us, and that it is poſſible for this diſtemper to remain here for years.

CHAP.

# CHAP. VI.

## *The Nature of Lazarettos and Quarantines. conſidered,*

THESE methods have been in uſe in moſt nations ſubject to this infectious diſeaſe, but never with ſucceſs. *Marſeilles* being perſwaded to the *Italian* practice of fires, guards, quarantines, &c. followed their methods to the deſtruction of the ſubjects. Let us now ſee whether we have any reaſon to follow them for the future.

We may, for once, ſuppoſe a ſummer like that in 1665, attended with great heat, moiſture, and ſoutherly winds; that ſome merchandize from *Turkey* was capable of imbibing the ſeeds of the Plague; that it was poſſible for it to be brought and ſpread in any part of *England*; and that our air, as well as the bodies of the inhabitants, were pre-diſpoſed to receive the infection.

Now, as the Plague is propagated by hot and moiſt air, how is it poſſible, to think, that walls ſhould be able to intercept the paſſage of

of this fluid? I ſhould as ſoon imagine, that the wall round *Hyde Park* would prevent the rooks from building in the oaks, or the ſmall birds in the buſhes; for birds have wings, and fly, ſo can the Plague. The wings of the Plague are the winds, and therefore it can ſoar higher than the towering ſuperſtructures of men.

Beſides lazarettos and quarantines, **ſhutting up houſes*, fires burning in the ſtreets, lines, intrenchments, guards, and ſhutting up whole cities have been tried over and over, for ages paſt, to prevent the ſpreading of this diſeaſe; but I never could learn that any, or all of theſe methods ever hindered it from going forward. Probably then the merchants will think themſelves ſomewhat burthened by the heavy expences they are now obliged to ſuffer in performing quarantine, whilſt the poor ſailors grieve to undergo an undeſerved impriſonment. But the nation, whenever it is thought proper, may prevent their ſuffering any longer theſe inconveniences, and, with ſafety, ſave the expence of building offices for ſuch purpoſes.

* The ſevereſt treatment imaginable, as it is aſſigning them to the cruelleſt of deaths.

At

At *Leghorn*, and other ports, where Lazarettos have been eſtabliſhed, the uſual method is to open every bale of merchandize, from one end to the other, and then the porters thruſt in their naked arms every day, to let in freſh air. This is the common practice.

Now I conceive that if the merchandize was infected, theſe porters, one time or other, muſt, according to *Mead*'s doctrine of contagion, receive the diſtemper, of which we ſhould have ſome accounts, Beſides, the porters would refuſe this employment as ſoon as inſtances could be produced of any of their fellow ſervants dying, by an infection received in this buſineſs.

It is alſo much to be queſtioned, whether our *Engliſh* porters would be perſwaded to work of this nature. Nay, I am afraid, that even convicts would rather chuſe to finiſh life at *Tyburn*, if they were ſenſible of ſuch danger.

It muſt ſeem ſtrange, that we have but lately inſiſted on quarantines, after a long, conſtant, and extenſive traffic to every part of the *Levant*, without ſuch care, or any injury.

If goods may retain the ſeeds of contagion, it would be very dangerous to open the bales, and expoſe the goods to the air; for the circumambient air would naturally kindle the fuel of the diſtemper, and, as it were, light it into a flame; for *air* is the food of fire; it kindles every thing flamable, and without it no fire can ſubſiſt.

Air is the immediate cauſe of fermentation and putrefaction, and can produce fire from moiſt bodies. As for inſtance,

A ſhip had taken in her lading of ſaffron-weed at *Salonica*. On her voyage, this commodity being moiſt, fermented and heated; the captain of the ſhip very injudiciouſly took up the pumps, to let in the air, and this freſh air cauſed a new fermentation. The weed ſoon after took fire and burnt the ſhip and cargoe. Much the ſame event happens to ſtacks of new hay, when they are put up with much moiſture.

The method taken by the *Indians* to produce fire, is by rubbing too hard pieces of wood together, which puts the intervening *air* into

into a violent motion; and this, in ſome meaſure, proves, that air is neceſſary to produce fire.

If *Turkey* wares brought to us could infect the nation, the perſons moſt ſubject to receive the infection, would be the mariners, becauſe when the hatches are firſt opened, there ariſe very warm and hot ſteams. They would be endangered likewiſe by removing the cotton, and as it is impoſſible to unload theſe veſſels without breaking the packs, inſomuch that abundance of it is to be re-packed. In the next place the cuſtom-houſe officers, and ware-houſe keepers, and every perſon employed, would be in danger of catching the diſtemper.

Permit me, therefore, to ſay, that if the Plague in 1665 had been the *Turkiſh* diſeaſe, it muſt certainly have firſt broke out ſomewhere about the Cuſtom-houſe, inſtead of St *Giles*'s, *Clare-market*, or *Weſtminſter*. Beſides, *London* would not have been the only city infected, *Norwich*, *Mancheſter*, nay, *Spital Fields*, and other towns and places, where the cotton was manufactured, would have alſo received the infection.

Since neither lazarettos nor quarantines have ever ſtopped the rage of the diſeaſe, and ſince

the notion of the Plague being tranſported to us is ſo ſtrongly rooted in our minds, I ſhall conſider a few of the many diſadvantages ſuch practices will produce.

Firſt, Encouraging the running of *Turkiſh* merchandize from *France* and *Holland*.

Secondly, A great hazard of having the Plague (if the diſeaſe can be imported) ſmuggled into the nation.

Thirdly, Diſabling this branch of trade from procuring ſailors to work the ſhips; for if they are to be impriſoned on their return home, they will naturally ſhun the employment.

Fourthly, ſuch places of impriſonment would be ſtore-houſes of contagion; for if goods cannot be healthy after a ſix weeks voyage, a quarantine (in forty days) cannot purify them. Beſides, another very great inconveniency will attend the lazarettos, for ſhips continually arriving with goods tainted, muſt, when brought into it, infect *anew* both the goods and men that were there before; ſo that the ſailors would receive the contagion again. This would be adding forty days to forty more; and when

the

ſailors would be clean enough for another voyage, or the merchandize fit for market, who can ſay?

Fifthly, Such ſtore-houſes of contagion are moſt likely to propagate the Plague amongſt us (if the ſeeds of contagion can remain in goods) for the whole lazaretto will be diſeaſed, and the air ſeizing it, will ſpread it to the adjacent towns and villages, and freſh goods will be a continual ſupply, ſo long as we trade with the *Turkiſh* dominions. I am not ſingle in this opinion, for Dr *Mead* (*p.* 34.) corroborates what is here advanced by the following paſſage:

"For while contagion is kept up and nurſed "in lazarettoes, and continually increaſed by "daily additions and ſupplies, 'tis impoſſible but, "by degrees, the air ſhould become tainted."

And again, page 56. "For confining peo- "ple, and ſhutting them up together in great "numbers, will make the diſtemper rage with "augmented force, even to the increaſing it "beyond what can eaſily be imagined."

Sixthly, If this trade ſhould ſuffer for want of men to navigate the ſhips, a decreaſe

of the cuſtoms follows, and a deficiency of the funds.

Seventhly, Injury in trade brings diſcredit; diſcredit, poverty and diſcontent, and the ſtarving of ten thouſand artificers, *&c.* not forgetting the fears and frights which which will expoſe us to a long train of miſchiefs.

To obviate, in ſome meaſure, ſuch inconveniencies, I ſhall now offer a method to guard us from purchaſing this fatal commodity, (that is, ſuppoſing this diſeaſe could be imported) without any additional expence to the merchants, or injury to the community :

It may be remembered that the *Eteſian gales* ſet in ſome time in *Auguſt*, and blow till *February* and *March*, during which months the Plague does not appear in *Turkey*.

I ſhould think then, that if the ſhips were commanded to be in *Turkey* in *Auguſt*, and ſtrictly to depart from thoſe countries ſome time in *January* or *February*, that ſuch orders would put a ſtop to the apprehenſions which now ſubſiſt among thoſe who are determined to believe that the Plague is capable of being imported.

For

For my own part, I cannot at preſent believe, that the Plague ever was or can be imported to us from *Turkey*, or from any other place; neither do I know any writer on this ſubject, that has ſhewn us one inſtance of it.

It ſeems ſtrange, that altho' neither a captain, ſailor, or any officer of a *Turkiſh* ſhip, after their arrival, was ſo much as found diſtemper'd, or any perſons hired to unload, have died, yet we ſhould tremble at this phantom, and imagine that ſhips can convey an infectious diſeaſe, without infecting the mariners or paſſengers.

It has never been proved, nay, never alleged, that any ſuch perſons were ever infected, or ever died of the Plague; and I believe no hiſtory can ſhew one inſtance of it in *England*. However, if there was any foundation for this opinion, that the Plague is imported by ſhipping, many experiments might have been tried to prove its validity, and the only reaſon why ſome experiments have not been offered, muſt have been, that the mariners never complained of any ſuch diſeaſe. Neither *Wapping*, *Limehouſe*, *Ratcliffe*, nor *Rotherhith* can produce ſo

much as an old woman's ſtory, of her ſon or grandſon dying of this diſtemper.

Since then no proof, by way of trial, has ever been made, to convince the world that *Turkey* ſhips were healthy, permit me to lay the following experiment before you:

Dr *Mead*, and others, have ſaid, that malignant diſeaſes are capable of being conveyed in the plumage of birds, alſo dogs, hogs, *&c.* have been killed by it; therefore the experiment I now offer is, on the firſt opening of the hatches to let fly ſome ſmall birds, or put ſome animals of any other ſpecies into the hold, and to let them continue there ſome time, and afterwards confine them, if they prove ſickly, die, or recover; from thence we may, with ſome confidence, form a judgment. This is an operation highly in favour of contagion, ſince hot air confined will almoſt kill any animal; therefore the ballance muſt here incline, as it ought, to the ſafeſt ſide of the queſtion.

If ſuch experiments ſhould not be approved of, I ſhould conceive, that inſpectors ſhould be appointed to go on board thoſe veſſels, and to examine the goods in the hold, and with naked

arms

arms pull the cotton out of the bags, ſmell to the mohair, ſponge, ſkins, and other merchandize, that has been ſuſpected to hold the ſeeds of that diſtemper.

The inſpectors ought to be thoſe who have a perfect knowledge of the diſeaſe, becauſe they ſhould examine every officer and ſailor before they make ther report.

Since then the Plague is a diſtemperature of the air, it cannot be ſtrange, that neither lazarettos nor quarantines never has nor never can intercept its courſe, therefore the experiments of birds, animals, and the reports of inſpectors of health may pacify the minds of obſtinate bigots, ſince they will confirm us in a belief, that neither the Plague in *England*, in 1665, or that of *Marſeilles*, in 1720, proceeded from commerce; for if they ever did, they will again; but then ſome of the officers or ſailors will be diſeaſed, or the birds or animals become diſtemper'd, all, or any of which, cannot eſcape the notice of proper inſpectors appointed.

The progreſſive motion of a Plague cannot be intercepted by the art of man, ſince there are pre-requiſites which always precede this diſeaſe.

I may

I may recite a narrative, to confirm what is advanced, *viz.*

Dr *John Chriſtopher Gottwald*, in his account of the Plague at *Dantzick*, communicated to the Royal Society, traces its origin from *Pinozow*, ſoon after the battle of the *Swedes* and *Saxons*, in 1702. It appeared near *Cracow* the year following, and thence moving weſtward to *Lemberg*, and eaſtward to *Upper Volhinia*, it ſpread in 1704, towards the *Lamber*. In 1705, it paſſed into *Great Poland*, and continued in the neighbourhood of *Poſen* till 1707, when it ſeiſed *Warſaw*. In 1708, it came to *Poliſh Pruſſia* and *Thorn*; and, in 1709, *(notwithſtanding all the neceſſary precautions were taken by Quarantines)* it gradually inſinuated itſelf into the ſuburbs of *Dantzick*, and thence into the towns.

He obſerves, that the year before the Plague broke out, a hard froſt, with great quantities of ſnow, fell there; alſo thick ſtinking miſts, which darkened the air, the winter before; from which he concludes, that the diſeaſe was from an *infection in the air*.

This

This obſervation exactly quadrates with the winter in *England*, preceding the Plague in 1665. And my notions are corroborated by the followed paſſage, in which he obſerves, that the poor ſuffered moſt, and that perſons who never ſtirred abroad, caught the infection, that many were ill in the town before it was judg'd to be the Plague; and that, without the leaſt reaſon to imagine it communicated by goods or perſons.

It may be remarked, that the *Poliſh*, *Dantzick*, *Engliſh*, and all the northern Plagues have ſucceeded hard froſts and great quantities of ſnow, but that every *Turkiſh* Plague, and more particularly that great one in 1348, followed ſoutherly winds and great rains.

From which it may be concluded, that the indiſpoſition of the atmoſphere is the original cauſe of this diſeaſe, and if intrenchments, lines, fortifications, quarantines, can ſtop the current of the air, certainly they ought, without loſs of time, to be put in execution. But, I am afraid, all will be ineffectual, unleſs we throw up great hills and mountains, to aſſiſt all the other contrivances.

It muſt be granted, that the qualities of the air are not always the ſame; it varies according to the different ſubſtance wherewith it is impregnated; and its operations, with reſpect as well to human bodies, as to flame, ſound, and light, will be according to the bodies that form its compoſition. On theſe principles alſo depend its gravity and elaſtic power, from which we ſee why ſituations of places differ ſo much, that ſome are as remarkable for ſalubrity, as others are for diſtempers. This holds true in many counties in *England*, and may be more remarkably explained.

The *Campagni di Roma* is a very fine plain country with an exceeding rich ſoil, but neither cultivated nor drained, conſequently becomes rotten and putrid, and ſends forth, during the heat of ſummer, noxious effluvia in ſuch abundance, that it is accounted very dangerous even to paſs through it, and certain death to paſs a night in it, ſo that it remains deſtitute of inhabitants.

*Gemelli* alſo obſerves, that the Plague in *Conſtantinople* generally breaks out in that quarter of the city which lies low and is marſhy.

From

From this view of the indiſpoſition of the atmoſphere, and a numeration of the various countries through which the Plague travelled in a ſhort time; I apprehend, that theſe nations could not be diſtempered by a communication from perſon to perſon, for theſe countries are vaſtly remote from each other.

If then, this ſhould be granted, it follows, that neither the *Engliſh* nor *Marſeilles* peſtilence were *brought in merchandize*, but ſprung, originally and ſolely, from *an infection in the air*. To which if we ſay, that theſe foreign kingdoms had not, at that time, even ſeen *Indian* or *Turkiſh* goods, nor had any current commerce with theſe nations, ſo early as four hundred years ago, it will greatly ſtrengthen my opinion, as well as ſupport my intention of pacifying the minds of my readers.

We may carry theſe conſiderations ſtill farther, by ſaying, if cotton, *&c.* were capable of retaining the ſeeds of the Plague; houſhold linnen, cotton goods, flannels, bedding, and woollens are equally dangerous. But if we look into any of the hiſtories of the Plague, we ſhall find it juſt the reverſe; for after the great

great Plague in *London*, in 1665,* *The people who had retired into the country, were ſo little afraid of the infection being preſerved in linen or houſhold goods, that on their return to town, they, without any ſcruple, entered the rooms of the ſick, before the people were quite dead, and went into the beds where the dead expired, even before they were cold, and before they were cleanſed from the ſtench of the diſeaſed*, but yet none caught the diſtemper. I conceive, that more inſtances might be produced of people eſcaping this diſorder after approaching the ſick, than of thoſe who catch it.

Let us particularly conſider the condition of phyſicians, apothecaries, ſurgeons, and nurſes. The queſtion is then, whether more of theſe people in the Plague of *London*, did eſcape with life, or died. According to what I have read, ſcarce any of them died, which ſhews, that the cauſe of the Plague ſpreading was more from the air than contact.*

* Vide *Hodges*'s Account of the Plague in *London*, in 1665.

* We have an account of five phyſicians that died during the Plague. This number is but ſmall, in proportion to thoſe employed in attending the afflicted.

The

The matter generated by the diſeaſe is too groſs to perſpire or paſs thro' the pores of the ſkin; for, if it could be diſcharged this way, we ſeldom ſhould find buboes and carbuncles, the happy criſes of peſtilential fevers. Neither is the pus in theſe tumors contagious, for all ſurgeons find, that the matter in ſuch like ſwellings is very viſcid, and that it does not fly off; if it did, they could not eſcape in their repeated dreſſings. It is evident, we have not had any complaints made from ſurgeons who have attended ſuch caſes, of receiving the Plague or poxes from their patients.

On the contrary, I have never ſeen peſtilential diſeaſes, where there was not a hot and dry ſkin, dryneſs in the glands of the mouth, ſcarce any ſpittle, without moiſture or perſpiration (unleſs when nearly recovered) therefore no effluvia can fly off to inflict the diſeaſe on viſitors, which makes it doubtful whether this diſeaſe can be received by contact.

I ſhould imagine, that a blite or blaſt in ſhrubs proceeds from the air, and not from one ſhrub approaching another. But gardens have at the ſame time felt the diſtemper, altho' ſituated in remote counties.

But

But, to return to my argument, it may be ſaid, that during the Plague at *Marſeilles*, the magiſtrates, for many weeks, burnt all the wearing apparel, houſhold furniture, *&c.* as was done in *London*; but ſoon after the phyſicians, of whom there was a great number, were ſo ſtrongly confirmed in their opinion, *that the Plague could not be conveyed in apparel, houſhold furniture, or merchandize, that they gathered together the very flannels, which had been made uſe of in the peſt-houſes, about the diſtemper'd, not only to prevent their being burnt or deſtroyed, but with an intent to preſerve them for future ſervice*; and yet there was no Plague heard of the enſuing year. Theſe are inconteſtible truths, and therefore will ſmother all idle imaginations.

I muſt not paſs over another abſurdity, which has been that of the terror in approaching thoſe who have died of the Plague. This was ſo dreadful at firſt, in *London* and *Marſeilles*, that the dead were ordered to be buried very deep in lime, to prevent any infection. Surely dead people never can emit any thing infectious, for the air is gone out. The *Turks*, and every inhabitant of their dominions, know the

the truth of this phyloſophy, for if they meet the bearers of the dead in the ſtreet with a corpſe, they never ſo much as turn out of the way.

As to the ſtory told by *Benedictus*, of a feather-bed retaining the poiſon of a Plague for ſeven years, and killing afterwards 5900 people, and that of a rag containing the ſeeds of the infection, for fourteen years.

*Foreſtus'* hiſtory of an old trunk, with a cobweb in the corner of it, making a Plague ſore. A perſon ſeized with this diſeaſe, by handling ſome thread. *Fracaſtorius'* tale of a leather coat killing 25 *Germans*, who wore it after each other; and ten thouſand men being deſtroyed by the contagion retained in it. The relation of a lady who dropt down dead of the Plague, by ſmelling to a *Turky* handkerchief. The account of a man who loſt his life, by ſtanding on a *Turky* carpet; and many other melancholy ſtories, I believe, were, in a great meaſure, the foundation of fixing the belief of this diſeaſe being *propagated by contagion*.

I could anſwer every one of theſe recited ſtories ſeparately and ſatisfactorily; but I am



confident,

confident, few, if any, will think them of any conſequence; ſince thoſe merchants who have lived in *Turky*, can inform us, that after the Plague has ceaſed, they, or their ſervants do handle and ſmell to the cotton, *&c.* without receiving any injury; for the malignity does not continue in theſe looſe and ſpongy goods, to ſuch a degree as to infect the *Turks* or *Armenians*, after th Plague ſeaſon is over; if it did, thoſe nations would never be free a month from the diſtemper.

Every one who has been in *Turky* well knows, that Stevidores and ſailors often work naked in ſtoving the cotton. This is a laborious employment, and the hold of the ſhip is exceſſive hot. Further,* the cotton packs or bales are continually handled and tumbled about, to fix the pieces of wood on, to facilitate their ſtorage. The labourers too are often bare-footed, therefore they cannot help treading continually upon the merchandize brought

* To every bale of cotton are fixed ſeveral long pieces of wood, called longeters. They are managed to form the bale like to a cone, and where a ſtrong man can but juſt force in both hands, one of theſe packs is heaved in by the ſtrength of a windleſs. The force is ſo great as often to raiſe the decks and ſides of the veſſels, and it is allowed to be the moſt curious operation in loading.

aboard

aboard. Nay, I have ſeen the ſailors breakfaſt, and others ſleep on theſe bales of cotton, &c.

Surely then, if the ſeeds of contagion were lodged in cotton, theſe men could not eſcape.

From what has been advanced, I conceive, that this *Turkiſh* endemial diſeaſe, this ſuppoſed effluvia, vapour, imperceptible ſteam, cannot any longer ſupport its credit, unleſs we are reſolved to pay no attention to the force of evidence, and to ſhut our eyes againſt conviction; for is it poſſible to bring a ſick perſon from *Turky*, to continue ſick all the voyage, and afterwards to infect *London?* This cannot eaſily be done, becauſe every perſon, ſick of the Plague, either dies or recovers in three or four days. For the ſame reaſon, towns have not been infected by ſick perſons, becauſe the violence of this fever is ſo great, as to diſable the afflicted from travelling to diſtant villages.

In ſhips, ſailors eat, drink, work, and ſleep in a very ſmall compaſs; but it has never been proved, that any ſhip had the diſeaſe after a fortnight being at ſea.

Suppoſe, upon the ſhip's departure any one was to fall ſick, even then the diſtemper would not ſpread further, unleſs the ſame corrupted ſtate of air ſhould exiſt through the various latitudes.

We know the Plague ceaſes, in every city, on a certain change of the air ; as it is produced by its corruption, ſo it will be ſtopt by oppoſite qualities. If this was not the caſe, we ſhould never conceive how the Plague ever can ceaſe, after any town is attacked, unleſs with the deſtruction of every inhabitant.

Again, if cotton could imbibe any contagious effluvia, it then muſt abound with *the active putrid ſalts, and highly attenuated oils* ; the very eſſence of the malignity would be packed in ſuch bales. The conſequence then would be no leſs than the death of moſt, if not of all the ſhip's crew ; for they are the people that muſt ſuffer firſt, for reaſons very obvious.

Theſe ſalts and oils ſo adhering to cotton, muſt be, *in their own nature, moiſt* ; and the hold of a ſhip, ſo ſtored with goods, is known to be *very hot.* We have here the *primary* and

and *ſecondary cauſes of contagion*, it follows then that a putrefaction muſt ſucceed; for the heat of the ſhip would rarify the poiſonous effluvia, and ſpread them to the neighbouring goods, which they would penetrate, and conſequently an increaſe of the malignity muſt enſue, inſomuch, that all the effects in the hold would be more or leſs poiſoned, and the malignity heightened to a contagion.

This would certainly be the caſe, could the cotton imbibe from the air the peſtilential *miaſmata* of the diſeaſe, and moſt of our ſailors uſing this trade would die in the voyage, and the *Turky* merchants would find a hard taſk to get men to work the ſhips; but no ſuch misfortunes have happened, nor do the ſailors apprehend, that ſuch miſchiefs can befall them.

We muſt now conclude, that if this diſeaſe can be conveyed in merchandize, from one part of the world to another, that is very remote, the diſtemper muſt be very frequent in our ſhips, or, ſince it is not frequent, that it cannot be ſo tranſported; and we need not be at the expence of lazarettos, or at the charge of performing quarantines.

If the firſt is true, then the merchants ought publickly to declare, that more ſailors annually die in the *Turky* trade, than in any other, in proportion to the number of men they employ. And they alſo ſhould let us know, whether in the voyage, or on opening the hatches, any ſuch ill effects have happened, and be very particular in this laſt, becauſe on unloading the veſſels, ſome ſteams will aſcend; therefore, if they contain the ſeeds of peſtilence, they muſt appear as dreadful as thoſe which ariſe from mines, wells, or the famous *Grotto del Cani*.

But if we have loſt no more men in the *Levant* than in other trades, we may preſume that the diſeaſe cannot be brought over. Here are two points of great conſequence, and much ſtreſs muſt be laid on the one or the other: The merchants who have long reſided in thoſe countries, as well as captains who have been for years employed in the trade, when called upon or examined, are qualified to give ſatisfactory anſwers. In the mean time, I can ſafely ſay, whilſt I was in *Turky*, that the ſailors were as healthy, as in any other nation, where I have travelled.

It might be inſiſted on, that if cotton, *&c.* could imbibe the malignity; the diſeaſe would frequently, nay, every year, be brought to us; for the Plague has raged in the ſeveral ports, at the time our ſhips were taking in their lading. To argue with more ſtrength, let us ſuppoſe the Plague did not rage at ſuch times; then ſurely theſe goods are as capable of retaining the poiſon for a month or more, while they are ſtored in the warehouſes in *Turky*, as they are of conveying it ſo many hundred leagues to us afterwards. For if *cotton*, *&c.* can be imbued with a diſtemper, it will again propagate that diſtemper in the ſame country, as often as ſuch goods are removed from one warehouſe to another. If therefore things were ſo circumſtanced, every town in *Turky* might let looſe the Plague whenever the inhabitants thought proper; or the bigots of contagion muſt give up every point of the Plague being conveyable by goods.

From what has been advanced, I would not be ſuſpected of denying, that the Plague, ſmall pox, and many other diſeaſes are contagious, for I have long known, that theſe diſtempers are communicable. All that I inſiſt upon is,

that diſtempers of very hot ſoutherly countries, and natural to thoſe climes, are unnatural to other countries ſituated in a northern latitude; and that the north is never attacked but when the atmoſphere abounds with heat and moiſture, the pre-requiſites of the diſeaſe.

That the Plague annually viſits ſome nations, is well known, but the time of its firſt appearance differs in proportion to their diſtance from the *Equator*; thoſe which are neareſt become ſickly in *February*; *Turky*, in *March* or *April*; *Italy*, in *May* or *June*; other counrries in *July Auguſt*, *&c.* and *its continuance* is according to the time of its viſitation: Thus thoſe who are moſt remote from the *Equator* have it lateſt, and therefore are more months free, becauſe the cold air which abounds with nitre, will always check its fury. On the contrary, thoſe ſituated nearer have it longer, becauſe the heat and moiſture continue many more months. I ſay, *moiſture*, becauſe moſt countries near the equinox are ſubject, about eight months in the year, to very heavy night dews, proceeding from the heat of the ſun in the day exhaling great quantities of moiſture, which, in the night again fall upon the earth, inſomuch that in many parts of the world I have ſeen the leaves of

the

the herbage and ſhrubs full of water, tho' no rain has fallen for months before.

As to the reality of contagion* in general, I have not the leaſt doubt of it, but the reaſon why all are not infected at the ſame time, is, that ſome bodies are not pre-diſpoſed to imbibe the diſtemper; an inſtance in my own family proves the truth of this obſervation.

About thirteen years ago, I prepared my two ſons and a maid ſervant, who was to attend them, for the ſmall pox. They were ſent to a houſe where the diſeaſe was rife, and both the boys received the infection, and had the diſtemper very favourably. Now this I call *contagion*, for they imbibed the morbific effluvia. The ſervant nurſed the children, and lay with them during their illneſs, but had no eruption, which may convince us, that ſome conſtitutions and habits of body are not at all times pre-diſpoſed for infection; for this ſervant, about ſeven years after, fell ill of the ſmall pox, and was grievouſly afflicted.

* Moſt authors of learning, ſince *Thucydides'* deſcription of the Plague at *Athens*, have proved, that diſtempers may be received by one from another.

Again,

Again, ſome have been inoculated once, or oftener, without any eruptions or ſymptoms, and, years after, have been ſeized with the diſtemper.

The conſtitution, at ſome ſeaſons and in ſome perſons, is ſo very ſtrong and powerful, that it will not only reſiſt the force of contagion, but alſo poiſon by *contact*; for we have many inſtances of two or three men cohabiting with one proſtitute, one of which has eſcaped the venom, whilſt the other two were infected with the venereal diſorder: nay, further, the ſymptoms and effects were not the ſame in both, for one has been only ſlightly infected, whilſt the other had excreſcencies and buboes, the ſymptoms of the pox itſelf.

Contagion is further proved by hanging a freſh joint of butchers meat *near one in a ſtate of putrefaction*, from which the ſound will imbibe the fermentative ſtinking juices, and in a ſhort ſpace of time alſo become putrid.

The reaſon why I have dwelt ſo long on contagion, was to convince my readers, that I believe the powers and effects of ſuch diſtempers;

pers; but then I would diſtinguiſh and confine them to *places and ſeaſons*. As for inſtance, at *Oxford*, in 1577, at the time of the aſſize, called the *black aſſize*, the judges, gentry, and near 300 people were killed by a ſteam brought into court from *the goal*, by the priſoners. (*Vide Lord* Verulam's *Nat. Hiſt. Cent.* 10. *No.* 194) So in the goal of *Newgate* a fever appears annually, but only in hot weather; and I am confident, it is *contagious*, and as ſuch, capable of afflicting many of thoſe who are in the ſame priſon; nay, further, even many others, if they are of a weak conſtitution, and are ſhut up for a ſhort time in the ſame room. This happened but a few years ago at the *Old Bailey*, when the lord mayor, Mr *Anthony Biggs*, ſurgeon, and many others, died of this malignant fever. But it does not follow, that the people in *London*, *Weſtminſter*, *&c.* ſhould receive the infection, for the diſeaſe is confined within certain limits.

Suppoſe there was a war in *Kent*, and a violent malignant fever, which had ſeized the greateſt part of the camp, (this has been called a Plagues by many modern authors) would it follow, that the people in *London* or *York* ſhould become diſtemper'd? No, it is a diſeaſe *ſui generis*,

*generis*, arising from heats and labour, filth, bad diet, *&c.* and not from *a distemper'd air*; for when the incampment is broke up, the disease will decamp likewise; and removing the troops farther into the country will remedy the mischief much better than all the aid from the practice of the ablest physicians.

Something similar to this happened when *Reading*, in King *James*'s time, was besieged by the Earl of *Essex*, there was a malignant fever raged in his army; but as soon as the troops marched, they became healthy, and the neighbourhood never felt any ill effects.

My opinion is yet confirmed, by remembring that during the great Plague in *London*, 1665, the king and court removed to *Oxford*, where, every day, they not only received messengers, with packets from *London*, but people were constantly going backwards and forwards, on the business of the nation; and though conferences were held with them, we cannot find, that either *Oxford*, the inns on the road, lodging for travellers, or the adjacent towns, during the whole season, were ever distempered, or had the infection. Hence I think it is proved, *that pestilential diseases are produced by a dis-*

*temper'd*

*temper'd air*, and propagated in thoſe cities which ſtraitly confine its current, and obſtruct its courſe, by narrow lanes and allies, of which almoſt all *London* conſiſted, before the fire.

Many other inſtances of the like nature I might recite, but they are not neceſſary. However I ſhall give you ſome few quotations from Dr *Mead*'s diſcourſe on the Plague:

In page 54 (8th *Edit*, 1722) he ſays, that " a hot air is more adapted to ſpread contagion " than a cold one, but more eſpecially that " ſtate of air, in which *unſeaſonable moiſture* " *and want of winds are added to its heat, and* " *that which gives birth to the Plague in ſome* " *countries, will doubtleſs promote it in all.*

In page 55, he obſerves, that " the Plague " is ſometimes ſtopt whilſt the heat of the ſea- " ſon increaſes, *upon the emendation of the air,* " *in other reſpects.*" Now this emendation of the air is, when the *moiſture* does not predominate, and then it becomes *hot and dry, which is healthy.*

*Galen*, on Temperament, *Book* I. *Chap.* 4. ſays, in like manner, *that nothing but hot and moiſt air can produce a Plague.* *Hip-*

*Hippocrates*, *Rhazes*, and *Avicenna*, were of the ſame opinion, for they declare, that peſtilencies are brought by *unſeaſonable heats*, *moiſtures*, *and want of winds to purify the air*.

*Hippocrates*, on epidemics, *Book* ii. and iii. tells us, *the ſtate of the air which precedes epidemical diſeaſes*, *is occaſioned by great heat*, *moiſture*, *and ſoutherly winds*.

*Mercurialis* aſſures us, " That the ſame conſtitution of the *air* attended the peſtilence at " *Padua* ; and further, that ſome indiſpoſition " of the *air* is neceſſary, in the *hotteſt climate*, " to cauſe an infection.

*Leo*, who wrote a Natural Hiſtory of *Africa*, *(Book the 1ſt.)* tells us, that " If ſhowers fall " during the ſultry heats of *July* and *Auguſt*, " *the Plague enſues thereupon*, *with which who-* " *ever is infected hardly eſcapes.*"

Dr *Mead*, (page 3.) ſays Ethiopia *is invaded with the Plague*, *whenever heavy rains fall during the ſultry heats of* July *and* Auguſt. Again, (page 110) *Nothing approaches ſo near to the firſt origin of the Plague as air pent up*, *loaded*

*loaded with damps and corrupted filthineſs.* And (page 69) *The Plague is a a real poiſon bred in the ſouthern parts of the world.*

All theſe are more ſtrongly confirmed by what is ſaid in page 30, *viz.* " That the Plague " at *Grand Cairo* is every year ſtopt at the over- " flowing of the *Nile*, as the *cold winds at that* " *time ſet in and purify the air.*"

In page 56, he gives the following inſtance: " At *Smyrna* the annual Plague conſtantly cea- " ſes about the 24th of *July*, *by the dry and* " *cold* * *weather they always have at that time*, " *the unwholeſome damps being then diſſipated*, " *that annoy the country in the ſpring.*"

The heat of the air is of ſo much conſe- quence, that if any of the ſhips ſhould arrive from the ſouthern parts *infected* in the winter months, *November*, *December*, *January*, or *Fe- bruary*, it never ſpreads, but if later in the year, as in *April*, or afterwards, it continues till the time before-mentioned.

If we reflect on the rapidity with which the Plague ſpreads itſelf through whole cities, we

* The merchants can aſſure us, that the Plague at *Smyrna* ceaſes when the winds come off the mountains, at which time they are very hot and dry.

can

can hardly think, that it proceeds from one to another, for the communication is too quick, therefore nothing but the air can be the cauſe of ſuch extenſive invaſions. Not to mention, that during the time of a peſtilence, people are are infected without approaching to diſeaſed perſons.

The proper means of ſtopping the Plague, or curing it, whenever this country is attacked, are the buſineſs of the phyſicians, to whom I ſincerely wiſh ſucceſs, in their endeavours.

*Having ſhewn that* Heat *and* Moiſture *are the primary Cauſes of the Plague, I ſhall explain their Influencies on the human Body, and demonſtrate the Cauſes of Putrefaction.*

THE firſt requiſite to putrefaction is *heat*, for without it nothing can putrify, but every thing putrifies ſooner or later, more or leſs, in proportion to the heat, *cæteris paribus*. The reaſon of this appears to be, that *heat* rarifies all bodies whatever, in proportion to the degrees with which it acts on thoſe bodies, and conſequently as they take up more ſpace by this rarefaction, by the ſame means, the contact of their componant parts muſt be ſmaller,

their

their cohesions less strong, and their solution more easy.

The other principal agent in putrefaction is *moisture*, for without this no bodies will putrify for ages, or perhaps ever, the reason of which is, that moisture penetrates into bodies, swells them, lessens their contact and the coheheſion of their parts, and prepares them for solution.

Now, the causes which retard or hinder putrefaction, are all those which increase the hardness of bodies, and render them more compact and close. Amongst these is *cold*, for this contracts bodies, renders them more dense, and increases the contact and cohesion of their componant particles, and renders the whole less liable to solution. As an instance of this effect of cold, may be brought its actions upon some sort of fish*, which are cured by cold only, in such a manner as to be capable of being preserved, without putrefaction, for a considerable time.

All sorts of salts which contain an acid, have the same effect, for the same reason.

* Stock Fish,

Thus ſea-ſalt, rock-ſalt, ſal-petre, and ſugar prevent bodies from putrefaction, becauſe they harden all animal and vegetable ſubſtances immerſed in them, and increaſe their coheſion.

As moiſture promotes putrefaction, ſo, on the contrary, an abſence of moiſture, or dryneſs, retards and even prevents it, till the body has, by ſome means or other, contracted a ſufficient quantity of moiſture, to ſupple and relax the parts, in ſuch a manner as to give the ſalts and oils an opportunity of making their eſcape, and thereby deſtroying the conſtruction and the very ſhape and exiſtence of the vegetable.

Thus, 'tis eaſy to dry the moſt ſoft parts of animals, in ſuch a manner as to preſerve them for years, without any tendency to putrefaction. And of this, amongſt vegetables, *Shaw* and *Hales* afford us very obvious examples; for theſe being laid up in a moiſt ſtate, *ſoon putrefy*, but when deprived of a conſiderable part of their moiſture, by *hot air*, may be preſerved for a very long time.

Animal food may be preſerved for a long time, by wiping it with a warm dry cloth, and thus

thus abſorbing the moiſture as often as it appears on its ſurface; for it is *this moiſture* that putrifies, when it comes forth in the open air; therefore the fleſh will remain untainted as long as you continue this method, and by this means you may preſerve the joint many months, at the expiration of which it will be found firm, hard, dry, and ſweet, but conſiderably leſſen'd in ſize and ſomewhat in weight. When it is intended for food, moiſture is neceſſary for maceration to ſupple and relax the parts, that the confined ſalts and oils remaining may expand themſelves. Again, it was from ſuch reaſoning we firſt learnt to dreſs hams, pickled meats, and dried fiſh.

Thus heat and moiſture predominating in the air, produce putrefaction. The ancients were ſo ſenſible of the influence of theſe cauſes, that *Hippocrates*, and other eminent writers, have ſpent much time and labour in many long diſcourſes on this ſubject.

That the air is the immediate ſupport of life, appears from the fatal conſequence of its excluſion, continued only for a few minutes, and from its animating qualities, it has been called *the lamp of life*. By it, the motion of the

heart and ſolids are maintained and preſerved. It is intimately incorporated with the effluvia of all bodies. The ſpring, bloſſoms of trees, flowers, and ſhrubs all contribute ſomewhat to its agreeableneſs and healthy ſtate. Life is not only ſupported by this grand agent of nature, but vegetation, fermentation, and putrefaction cannot be carried on without it. Animals and vegetables owe alike to this fluid, their growth, verdure, bloom, and glory ; and we, our health, comfort, and enjoyment. Of this the experiments on the air-pump give ſufficient evidence ; for every animal or vegetable gradually falls, becomes pale, ſickens, languiſhes, and at laſt expires, when the air is exhauſted.

This lamp of life preſerves our bodies in a two-fold manner ; firſt, by its elaſtic power or force, the ſmall bladders, or veſſels, of the lungs are diſtended at the time the blood is paſſing through them, and thereby its globules or particles are comminuted or broken into leſſer parts, which if divine providence had not ſo ordered, the conſequence would have been an obſtruction in the glands, and probably from hence the inward air would be pent up in the veſſels, bowels, and cellular membranes, from which would ariſe colics, hiſteric diſorders, ſpaſms,

ſpaſms, and other chronical diſeaſes, which would be engender'd by its ſalts, ſulphurs, and elaſtic power; for *air is nothing more than vapours, rendered ſpringy by heat or fire.*

Secondly, the air, by inflating the lungs, propels or preſſes the blood forward in its circulation, and, at the ſame time, ſupplies its ſtream with ſomething neceſſary for longevity, (probably rays of heat gathered from the ſun) for on all hands it is agreed, that the air abounds with ſome enlivening ſpirits or vivifying matter, and *Hippocrates* tells us, that *The ſoul of man is nouriſhed by a luminous ſubſtance, and not by meats and drinks taken into the lower belly, which luminous air is received into the blood, both by reſpiration and the pores of the body.*

Hence we may account for the dead becoming almoſt inſtantly cold, becauſe the fiery air no longer exiſts in the body. Theſe fiery particles alone give nutritive qualities to waters, ſince ſuch as are excluded from the rays of light chill and deſtroy our garden vegetables, flowers, as gardiners have long obſerved.

Thus much is ſufficient to convince us that the air, in a ſound ſtate, preſerves both animal

and vegetable bodies, and that without it nothing can live ; which leads me, in the next place, to conſider the inſalubrity of the air produced by the alteration of its natural and healthy conſtitution or principles, from which infectious diſeaſes take their origins.

We may affirm, that the air is in a morbid ſtate, when it abounds with *too much heat*, *moiſture*, *and groſs matter*, mixed in greater proportion than at other times ; for theſe changes are productive of putrefaction and other diſorders in the fluids. Now this alteration of the air begins in different months, in different countries. Thoſe nations that are near the Line feel its effects early in the ſpring, whilſt thoſe in a more northern climate are not ſenſible of them till the ſummer is advanced.

The time when air has its elaſtic ſpring moſt weakened, is when it contains a redundancy of moiſture, with intenſe heat, by which it is ſo weakened, as to be no longer able to break aſunder the round particles of the arterial blood in the lungs, and from hence ariſe obſtructions in the veſſels.

Diſtempers of a malignant nature will ſpread among us whenever ſuch air abounds, for it is then in a *poiſonous ſtate*. I don't mean, that it is impregnated much with poiſonous ſubſtances; but that it is in ſuch a ſtate, that it is incapable of performing its natural office, and therefore unfit for the ſupport of life.

Now, whatever will alter the ſolidity, ſize, figure, or motion of the blood, or its componant parts, will bring on violent diſeaſes. That ſuch changes are poſſible, and that too on a ſudden, and in a manner very ſurpriſing, is certain beyond diſpute; ſince it appears, from the inoculation of the ſmall pox, mercurial ointment rubbed on the ſkin, vapours from the chymiſt's laboratory, mines, the powers of electricity, the effects of the *torpedo** or cramp-fiſh, and many more.

It therefore follows, that whenever the globules of the blood are either too large or too ſmall, a diſeaſe is the conſequence; becauſe when they are become larger than their natural

* See this author's particular account of the Torpedo, given to a gentleman in *Oxford*, and publiſh'd in the *Oxford Miſcellany* for *February* 1750, page 49.

ſtandard, their coheſion is ſtronger and greater, and then appear maſſes incapable of paſſing through the capillary veſſels, the event of which is a ſtagnation and ſudden death.

On the other hand, when the blood is divided into too minute particles, the veſſels become diſtended and over-ſtretched, the circulation proves languid, afterward ſtops, and life is at an end.

Longevity conſiſts then in an equable motion of the fluids, and a due reſiſtance of the ſolids, depending on *inſpiration* and *expiration*. The firſt to convey to the blood ſome ſubtle particles of air to maintain its motion through the lungs, and to comminute the globules, all which can only be performed by the elaſtic force or ſpring of the air, the tone of the veſſels being thereby ſupported, and the ſecretions juſtly performed.

The principal uſe of expiration is to carry off heated and moiſt ſteams from the pulmonary veſſels, which is performed by the air falling in contact with ſuch moiſture, and giving them a volatility ſufficient to paſs off in the form of ſteams.

Having

# CHAP. VIII.

*Having explained the manner how our bodies are maintained and infected by air in general, it may not be improper to ſhew, that this and moſt other nations, almoſt every year, are afflicted, more or leſs, with peſtilential diſtempers.*

IF in the ſultry months we examine into the diſeaſes of *Newgate*, the *Savoy*, or any of the goals in *England*, or thoſe of other cities in *Europe*, we ſhall find a peſtilential diſeaſe every year in them, tho' not ſo malignant as the peſtilence in ſultry climes, nor of ſo long continuance, yet ſufficient to deſtroy many of the priſoners. And this diſeaſe is alſo contagious, becauſe it takes its origin from putrid air. Mariners alſo, in long voyages, eſpecially thoſe belonging to the navy, frequently too, have felt the experience, not ſo much from the coarſe diet, as from the ſhips being crowded with ſuch numbers of men, from whoſe breath and bodies ariſe hot ſteams, which ſhews the neceſſity of ventilators to draw forth the corrupted air, and at the ſame time to refreſh them with better.

The

The breaths of people confined a ſhort time, will deſtroy themſelves; as, about nine years ago, in St *Martin*'s priſon, many being cloſe ſhut up, ſome died in a few hours.

Such like epidemical diſeaſes are not confined to goals, navies, or camps, but they are almoſt yearly felt in many cities, and ſometimes they are ſo virulent even as to be contagious, terminating in *Carbuncles*, *one of the true ſymptoms of the Plague*; ſo that we may affirm, that every year we are afflicted with the Plague, in a more mild degree, than thoſe cities which lie in the ſouthern latitudes.

It would be abſurd to ſay, that *Turky* is the only or principal nation, where the Plague takes its riſe; every nation is ſubject to it; ſome parts of the *Eaſt-Indies* feel its effects every year, and much earlier than any of the *Turkiſh* dominions. As, for inſtance, *Surat* is affirmed to be often viſited by peſtilence. Alſo the *Weſt Indies* are as ſubject to epidemical diſtempers annually, as any diviſion of the globe. I have often ſeen the ſame ſort of epidemical dyſentery in *Barbadoes*, as is deſcribed by *Proſper Alpinus* in *Java*. The bilious fever, called *Febris ardens*

*dens bilioſa*, is alſo malignant; and this laſt, as well as the dyſentery, have their returns exactly as the Plague in *Turky*.

It is well known, that the Plague is not always one and the ſame, for the ſymptoms, in different countries, are various; they differ in kind and in degree of violence; ſometimes it kills in 24 hours, at others, not till three or four days.

To travel over the whole world, and to recite the particular appearances of peſtilential diſeaſes in every part, would be too laborious to me, and too tedious to the reader; therefore I think one inſtance may, at preſent, be ſufficient; It is of that diſeaſe which happens to *Barbadoes* yearly; and this, having lived in that iſland ſix years, I ſhall give from my own journal; firſt remarking, that the viſitation of both bear as great analogy to each other, as the difference of latitude, *&c.* can admit.

I rather choſe to ſpeak of this epidemic diſeaſe *(yellow fever)* becauſe ſome have affirmed that the Plague is utterly unknown in *America*, being ſo far remote from *Afric*, and countries recorded for infection.

CHAP.

# CHAP. IX.

*A particular Account of the endemial Diſeaſe of* Barbadoes, *known to* Europeans *by the Name of the* Yellow Fever, *ſhewing its periodical Appearance to be ſimilar to the* Plague.

THE Iſland of *Barbadoes* was firſt ſettled by the *Engliſh*, about the year 1624. Ever ſince it was inhabited by *Europeans*, it has once a year been viſited with a peſtilential diſtemper, at ſome times more virulent than at others; but generally not much leſs fatal than the Plague; but this diſtemper is not peculiar to *Barbadoes*, for all the *Weſt Indies*, as well *Spaniſh* and *French*, as *Engliſh*, are ſubject to this calamitous diſorder.

This diſeaſe is commonly known by the name of the *bilious* or *yellow fever*, and is ſo dreadful to the new ſettlers, and particularly to *European* ſtrangers, that two phyſicians, of ſome eminence in that country, thought it highly worthy of their conſiderations, and accordingly made it the ſubject of two volumes. One of theſe gentlemen* ſeems perſwaded, (according to the late notion) that the *yellow fever* was

* Dr *Warren*.

origi-

originally imported from *Marſeilles*, ſoon after the Plague raged at that place, to *Martinico*, and from thence to all the *European* ſettlements in *America*. But, upon the ſtricteſt enquiry, I don't find the leaſt foundation for ſuch an opinion; for, beſides that many of the inhabitants, now alive, remember it equally deſtructive before the period of that Plague at *Marſeilles*, as it has ever been ſince, if we credit the hiſtories and traditions of the *Spaniſh Weſt Indies*, it has, from time immemorial, left, every year, indelible evidences of its greater antiquity.

In giving the hiſtory of a diſtemper, I apprehend it abſolutely neceſſary, to deſcribe the ſymptoms, as they ariſe from the ſpontaneous operations of nature, when nothing has been done to alter or interfere with them, as *Hippocrates* has done in his deſcription of particular caſes in the epidemics, from whence he compiled his hiſtories of diſeaſes and their prognoſtics. But the modern practice of phyſic admits of nothing like this. For the practitioners in *America*, as well as *Europe*, purſue the patients intereſt, or their own, with ſo much aſſiduity, and find out ſuch a redundancy of remedies, for every ſymptom that ariſes, that 'tis impoſſible, in this confuſion, to diſtinguiſh the works

of

of art from thoſe of nature, and to ſeparate the accidents of the diſtemper from thoſe excited by the medicines exhibited. I muſt preſume, that this is the reaſon why the gentlemen who have written on the Yellow Fever have but imperfectly drawn the out-lines of the diſorder, and that in a manner not very ſatisfactory. Of this, however, I am certain, that during my reſidence at *Barbadoes*, it was an inſuperable obſtacle to my making any accurate obſervations, with reſpect to the ſpontaneous tendency of the diſtemper, and conſequently of adding any phenomena to what is thus delivered by the judicious Dr *Town*.

'This fever invades the patient in a moſt 'precipitate manner. The only notice it gives 'of its aſſault is a momentary chilneſs and ſhi-'vering, which is ſoon ſucceeded by a burning 'heat, which diſperſes itſelf univerſally over the 'body, but is felt more intenſely about the 'præcordia. This heat is attended with a 'high, ſtrong, and rapid pulſe, heavineſs in the 'eyes, a throbbing pain in the head, and violent 'beating of the temporal arteries; a thick and 'laborious perſpiration, nauſea, and retching to 'vomit, and when any thing is thrown up, it 'is of the bilious kind. To theſe we may add

'great

'great anxiety, pain in the back, loins, and an 'uneasy lassitude in all the limbs.

'The symptoms subsequent to these (which 'often discover themselves in the space of 'twelve hours from the invasion) are a dry, 'harsh, rough, and discoloured tongue, insa-'tiable thirst, soreness all over the body, great restlessness, and a deliria.

'In the last stage, the patient labours under a 'deep *coma*, oppression of the *præcordia*, hea-'ving of the lungs, an interrupted respiration, 'tremblings of the tendons, convulsions, and 'cold clammy sweats. These are the three ad-'vances to be taken notice of in this distemper, 'which usually terminates in a favourable crisis, 'or the death of the patient, about the fourth 'day after the first attack. *

I shall now hasten to my proposition which is to account for the periodical appearance of the Yellow Fever, and must therefore lay down with some exactness, the situation of *Barbadoes*.

This island then is nearly situated in 13 deg. north latitude, the trade winds, for the most

* *Vide Town's* diseases of the *West-Indies*.

part

part of the year, follow nearly the courſe of the ſun, that is, they blow near nine months from eaſt and north-eaſt, ſeldom veering above two points of the compaſs. But in or about the latter end of *July* or *Auguſt*, the winds ſhift to the ſouth, on which change the rainy and ſickly ſeaſon ſets in, and continue to the latter end of *Auguſt*, ſometimes to *September* and the beginning of *October*; then the winds begin to blow again from the north-eaſt, and 'tis then this diſeaſe diſappears, on which the weather is again ſettled and ſerene.

The violent heat of the ſun is nearly equal all the year, the variation not being above ſix degrees. * The longeſt day is about thirteen hours, and the ſhorteſt about 11 and a quarter, the twylight, morning and evening, ſcarce half an hour each.

From the firſt ſettlement of this iſland down to this time, this diſtemper has ſcarcely omitted the ſeaſon or year, to viſit the new comers, and,

* *Sunday, July* 2, 1749, Mr *Farenheit*'s thermometer ſtood in *London* at —— 84 ¼
*July* 23, 1749, —— 70
The difference in 21 days is 14 ½
By which means we may obſerve what an unſettled climate we live in, and the reaſon why colds, inflammations, *&c.* are ſo common in *England*.

by

by ſix years obſervation I find, that hardly three in a hundred have recovered. How different were the opinions and practice of Dr *Town* and Dr *Warren!* and how wavering and contradictory were the ſentiments of later practitioners in phyſic, and thoſe who attended the worthy and truly brave Capt. *Balchen*, the honourable Commodore *Legge*, and many others, who fell victims to this furious diſeaſe. Such muſt be the fate of all, whoſe lot it is to come under the hands of people who never mechanically inveſtigate the cauſeof diſeaſes.

Doubtleſs, it would ſtartle a ſtranger, to ſee his friend changed, in a few hours, by this diſeaſe, into the complexion of an *Indian*, or of a deeper hue than that of the moſt inveterate jaundice; but ſuch inſtances are common during theſe months, *they being the hot and moiſt ſeaſons.*

It may not be improper to obſerve, that as ſoon as the rainy and ſickly ſeaſon comes about, great flocks of birds of various kinds alſo come over from the continent, ſuch as the grey plover, wild duck, widgeon, curlieu, with many others of the fiſſipede kind; nay, ſo numerous are the flocks, that almoſt every paſture

Flocks of [illegible] arrive at Barbadoes along with South Win[illegible] & Yellow-F[illegible] follows..

throughout the whole iſland is covered with them. And it may be further remarked, that theſe fowls take flight, and return to the ſouthern parts of *America*, as ſoon as the wind changes to the N. N. E. quarter, inſomuch, that in a ſingle day not one of theſe birds is to be ſeen. But this ſudden flight is not more ſurpriſing than the equally quick diſappearance of this direful diſeaſe at the ſame juncture.

That theſe birds come from the ſouth is very certain, for I have myſelf frequently ſeen prodigious numbers of the ſame ſpecies, at *Surinam*, *Barbice*, *Iſqueba*, *Oroonoko*, and all along the ſouthern continent of *America*.

It is proper to obſerve, that all the coaſt of ſouth *America*, oppoſite to *Barbadoes*, for many leagues within the land, conſiſts of moraſs and marſhy grounds, extremely unhealthy. From hence, it is poſſible and very likely, that the ſouthern winds, when they blow, do convey to *Barbadoes* putrid exhalations, beſides the effluvia ariſing from animals and vegetables putrifying on that vaſt continent, and rendering the air ſultry and humid, in conſequence of the continually rains.

At this time then we find all the pre-requiſites to putrefaction, contagion, and putrid diſtempers; which accordingly happen ſoon after the ſouth winds begin to blow, the rainy ſeaſon ſets in, and the heat of the atmoſphere increaſes.

According to the doctrine of ſome, it will ſeem probable, that epidemical diſtempers may be brought over in the plumage of thoſe migratory birds; and I think it as poſſible, as that the Plague can be tranſported from one nation to another in cotton, cotton-yarn, mohair, or raw ſilk.

I would readily grant, that birds are capable of tranſporting, in their plumage or feathers, the Plague, from one nation to another; but then it muſt be allowed, that they themſelves will be ſickly and diſeaſed, and conſequently their fleſh unwholeſome for food; yet it is quite contrary, for theſe birds are very plump, fat, and appear healthy, and their feathers are ſmooth, ſhining, covering their bodies like a continued feather. They are accounted very delicious diet, and appear at almoſt every table during the ſeaſon. I have fed on them often, and never

felt any inconveniences, nor ever heard of any one that has complained, after a hearty meal on them; therefore this diſeaſe is not brought in the plumage of birds, but ariſes from other cauſes.

As to the degrees of heat (being moſt violent the latter end of *July*, all *Auguſt* and *September*) it is beſt known by *Fahrenheit*'s thermometer, which I have obſerved to riſe to 80 and 86, and once it got up to 90. The ſun has, at ſuch ſeaſons, great force on our bodies, and, at the ſame time exhales from the ſea, ponds, *&c.* great quantities of moiſture, which being ſuſpended and intermixt with the atmoſphere, muſt, on the ſun's falling below the horizon, ſubſide by their weight.

From ſuch obſervations, we account for the great dews and the danger of being in the open air after the ſun is gone down. This moiſt air is ſo deſtructively pervading, that even pocket-keys, ſurgeon's inſtruments, ſteel work in watches, (though continually worn) cannot eſcape its injury. Iron bars, and bolts of doors grow ruſty, and ſoon decay; an inſtance of which, Capt. *Swanton*, of his majeſty's ſhip *Mary Galley*, ſhewed me: One of the large iron

iron bolts in the quarter deck gunnel, which had not been made above three years, on a ſlight touch, flaked off in ruſt, inſomuch that hardly any part was left ſound. Silver, braſs, copper, and the fineſt poliſh'd ſteel ſuffer the like corruption, notwithſtanding the niceſt care uſed to preſerve them.

Doubtleſs, garden vegetables, fruit, corn, and the herbage in general, at this ſickly ſeaſon become more or leſs diſeaſed. Can we then imagine, that the frame of human bodies, and more particularly of a ſtranger to this climate, can eſcape without feeling any effect! No; his fibres will be unbent, the circulation of the blood weakened, inſenſible perſpiration leſſened, the bodily ſtrength impaired, and profuſe and ſickly ſweats ſucceed, which are followed, ſooner or later, with the fever.

'Tis worth our while to conſider the nature of the lands on the continent of South *America*, from the country of the *Amazons* down to *Oronooko* river, which is near ſix hundred miles. Theſe countries are along the ſea coaſt, ſwampy, full of bogs and marſhes, and covered with mangrove trees, whoſe ſpreading boughs exclude the ſolar rays.

When the wind blows from the ſouth, it directs its courſe to *Barbadoes*, and the other Caribbee iſlands, ſweeping from this boggy continent, groſs, phlegmatic, and watery particles, noxious atoms, and unwholeſome damps, and this happens when the ſun is near the zenith, on his return from the northern tropic, which produces the moſt ſultry weather in theſe iſlands. Such ſultry heats, with the air ſo impregnated, muſt bring on putrefaction.

That the ſweat, and fluid of inſenſible perſpiration are diſcharged through the pores of the ſkin, and that continually, is well known ; and therefore it is not to be doubted, but ſubtle corpuſcles will inſinuate themſelves into the blood through the ſame paſſages. If to this we add, that in the year 1748, in particular, there were four or five dry months, which preceded the ſouthern winds in *Barbadoes*, ſurely the riſe of this peſtilential diſtemper can no longer be a myſtery.

I therefore maintain, that this diſtemper is *epidemical*, that it ſprings from a corruption of the air, and that its violence is in proportion to the continuance of the *heat* and *moiſture* ;

and

and this is a truth which can be atteſted by all thoſe who obſerved, that as ſoon as the heavy rains fell, and the wind ſhifted (which was about the 20th of *October*) the air or climate was changed, the diſtemper diminiſhed, and the malignity immediately abated.

Every nation ſubject to endemial diſeaſes, feels the effect of ſuch ardent fevers only in particular months, ſince thoſe countries are more free from ſlight indiſpoſitions, than others who are leſs liable to hurricanes, tornadoes, and earthquakes. *England* ſeldom has felt ſuch violent diſturbances, and probably, as ſeldom has felt the rage of this diſeaſe, ſince both ariſe from a ſudden and haſty change of the air.

Do not the ſentiments of *Hippocrates* and *Galen* (*p.* 105, 106.) exactly quadrate with the late ſeaſons in *Barbadoes*? and indeed their obſervations are founded on philoſophical and mechanical reaſonings. Firſt, they are confirmed by philoſophical experiments. The mercury in *Fahrenheit*'s and *Reaumur*'s thermometers did not riſe ſo high as in ſome months before, although the heat at that time was great. This, to ſome, may ſeem a paradox; however it is eaſily accounted for, ſince

tho' the air was exceſſively hot, it was incorporated with a larger quantity of *moiſture* than in the preceding months, and conſequently became *leſs elaſtic*, ſo that the mercury muſt of courſe ſubſide.

Secondly, the quantity of dampneſs very manifeſtly relaxes the animal fibres, the energy or ſpringineſs of the muſcles thereby being weakened; and this is demonſtrable by a cord ſuſpended with a weight, which will contract in hot and moiſt weather, but in hot and dry weather will again be relaxed to its former length. Hence we learn, when the weather is hot and dry, it is a *healthy ſeaſon*, but when very hot, with moiſtneſs, or when heavy rains fall ſuddenly, with heat, after long droughts, a *ſickly ſeaſon*.

If we compare the ſymptoms of the diſeaſed with thoſe that ariſe from the venom of poiſonous animals, we ſhall find them greatly reſemble each other. The ſymptoms of the diſeaſe I am treating of are pains about the ſtomach and navel, fluttering of the heart, high and quick pulſe frequently interrupted, vomitings, ſometimes yellow, and at other times black, great anxieties, reſtleſsneſs, cold ſweats,

the

the coats of the eye yellow, and alſo the ſurface of the whole ſkin.

Thoſe which appear on the bite of mad or poiſonous animals, are, faintneſs, great ſickneſs at the ſtomach, bilious and convulſive vomitings, cold ſweats, pains about the midriff and navel, diſcolouring of the ſkin with a deep yellow, a quick but low and often an interrupted pulſe, and, what is more wonderful, is, that all theſe mortiferous ſymptoms are frequently produced from one drop of poiſon.

How ſtrong is the reſemblance of theſe ſymptoms! I think, they inform us, in a plain manner, that the yellow fever is brought on by a poiſon; that is, a *poiſonous ſtate of the air.*

*Having explained the cauſe of the diſtemper, I ſhall now proceed to ſhew why the ſurface of the whole body becomes yellow under this diſeaſe.*

I conceive, the reaſon why the diſeaſed are thus ſuddenly and ſtrangely afflicted, is, that the fluids are infected firſt by the air, and the nervous membranes drawn into convulſive or ſpaſmodic contractions, which conſtringing the orifices

orifices of the biliary pipes, into which the bile or gall ſhould run, prevent its paſſage ; hence the bile returns into the blood, and continuing in the circulating fluid, through its whole courſe, tinges the ſkin univerſally yellow, that being nearly the natural colour of the bile ; and this is brought on primarily by the juices becoming ſlimy, and ſtopping up the mouths of thoſe veſſels, and by the want of due elaſticity in the air ; for an obſtruction in any of the *viſcera* does not proceed from their being firſt diſeaſed, but from an ill ſtate of the fluids which paſs through them.

That ſuch ſudden diſcoloration of the ſkin proceeds from the bile only, is further proved by obſerving, that violent colics have often cauſed in a few hours the like appearance, from forcing back the bile into the blood ; and in like manner as in the jaundice and colic, white and hard ſtools with coſtiveneſs, attend this diſeaſe. Now ſuch coſtiveneſs and white ſtools never happen but when the bile is interrupted in its natural paſſages, and forced back into the blood : For it is notoriouſly true, that the evacuations of the *fæces* is cauſed by the gall, and he that has none cannot have ſtools,

ſtools, as appears in two caſes communicated to the public by the learned Dr *Steward*, in both which the two men who had their gall-bladders wounded, could not be brought to ſtool by clyſters or the ſtrongeſt purges.

I have often obſerved, in the ſeveral voyages I have made into many countries, that thoſe people who were grievouſly afflicted with the ſea-ſickneſs, have, in their vomits, thrown up the bile itſelf, ſeemingly in its natural colour, without any admixture; the conſequence of which was, that they were very coſtive, and did not go to ſtool for ſeveral days after, nor did they make much urine. By reaſoning from hence I am convinced, that the tawny hue in the yellow fever ariſes from a diſtemper'd bile circulating in the blood.

That the liver ſeparates the gall, and that the bile mixes with the ſoft, pulpy, milk-like fluid, called *chyle*, and, with it, is daily taken into the circulation, and alſo, that it is ſoon after again ſeparated from the blood, for the ſame uſe, is a general received opinion; but when its compoſition is altered, its ſeparation from the circulating fluid will not be juſtly

per-

performed, becauſe its ill ſtate will leſs ſuit with its ſecretory canals, ſo that it muſt remain in the blood, and diſcharge itſelf upon the inward membranes and the whole ſurface of the ſkin. To this opinion I ſhall adhere, till it is ſhewn, that there is ſome other fluid in the body, which can produce the like change of colour.

From hence we may learn, that the bile makes an unnatural alteration in the circulating fluids, changing their healthy, ſoft, and flexible particles into hard and rigid globules, by which they become diſqualified to alter their round into an oval form, for a more eaſy paſſage through the orifices of the capillary arteries and veins, and alſo for re-aſſuming their former ſhape, when they arrive in thoſe veſſels that afford them a larger ſpace.

The maſs of blood being thus contaminated, the nervous organs ſoon become diſtempered, by the diſeaſed fluid circulating through them; and hence convulſions ariſe, the whole nervous ſyſtem is affected, and drawn into ſpaſmodic contractions, terminating in almoſt a ceſſation of motion, at which time the diſeaſed feels little or no pain. If the patient is attended with

deliria,

deliria, fits, or comas, they demonſtrate, that the nerves of the brain are principally affected. Sickneſs, vomitings, or gripes indicate that the nerves of the ſtomach are drawn into convulſions. Suffocations, and difficulty of breathing, ſhew the lungs are diſorder'd. Palpitations, ſwoonings, a low and quick pulſe, with frequent interruptions, denote the parts about the heart are injured. Diſcoloration of the eyes or ſkin prognoſticates, that the liver is diſtempered. Small quantity of urine, and ſeldom diſcharged, is a proof, that the urinary paſſages and glands are diſeaſed.

The appearances in the bodies of thoſe who have periſh'd by this diſeaſe, upon diſſection, are in general much the ſame as thoſe that die of very ardent and putrid fevers; but there are ſome other phenomena particularly obſervable, which, together with what has been already ſaid, will conduct us to the knowledge of the diſtemper, and ſupport what has been advanced concerning the liver and biliary organs being principally diſeaſed. Thus, in all the abdominal viſcera, or the organs contained in the lower belly, the veſſels are exceſſively diſtended with a very fluid blood, and all thoſe

veſſels

veſſels which may be called ramifications of the *vena porta*, which convey blood directly to it, and which, by their union, form it, are remarkably turgid, and ready to burſt. The liver, in particular, is diſtended and putrified, and, in many bodies, burſt, and then a black fluid, reſembling melted pitch, but not at all tenacious, is found extravaſated in the cavity of the belly, with a yellow oil ſwimming upon it, much reſembling the matter which in the worſt ſtate of this diſtemper, is diſcharged by vomit and by ſtool.

*I ſhall now proceed to ſhew the reaſon why new-comers to the* Weſt Indies *are more ſubject to this diſeaſe, than the* Creoles *or natives, ſince above fifty of the former are afflicted to one of the latter, and in leſs than ten months after their arrival.*

If we compare the climate of *Barbadoes* with that of *England*, we ſhall find the former as different from the latter as their latitudes; the temperate air of this iſland, by the beſt thermometer, being 32 degrees hotter than the temperate warm air in *England*.

Tem-

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|---|---|
| Temperate warm air in *Barbadoes* | 80 |
| in *England* | 48 |
| Difference | 32 |

From which we may rationally conclude, that the conſtitution of an *European* naturally undergoes ſome change; and this ſeems highly probable, when it is obſerved, that on his firſt arrival, and for ſome weeks after that, his face and hands are ſo bedewed with ſweat, that they are very difficultly kept dry with ſeveral handkerchiefs employed continually for that purpoſe.

This violent and profuſe ſweating is cauſed by the fibres falling into a more relaxed ſtate, thro' the intenſe heat, from whence the blood becomes at firſt thinned, and the pores in general much widened. After a month, or thereabouts, the ſolids and fluids grow more uniform and certain in their actions, upon which this troubleſome and unſeemly cutaneous diſcharge is conſiderably abated.

Another reaſon why *Europeans* are moſt ſubject to this diſeaſe, I believe, is the diſſolution of the fat contained in that univerſal tegument called the *membrana adipoſa*. This oil, is diſſolved by the heat of the climate, and is diſcharged

charged by the cutaneous glands through the pores.

But if at this time the *Europeans* ſhould, by the cold dews, or any other irregularity, have theſe emunctories ſhut up, this oil will be abſorbed, and carried into the arteries and veins, and take its courſe with the circulating blood; and it is then that the body becomes diſtemper'd; for the maſs of blood being by heat rarefied and expanded already, and now taking this additional fluid into it, nature muſt ſtruggle to relieve herſelf of the load or burthen, which if ſhe cannot diſcharge, obſtructions, inflammations, deliria, with all the direful train of ſymptoms, come on, cauſed partly by the *momentum* being increaſed, which diſtending the veſſels, produce a general obſtruction, and partly by changing the blood into a viſcid maſs, from whence the vital, the natural, and animal functions become diſorder'd, inſomuch that the diſtemper hitherto has baffled the art of medicine.

The *Creolians* have their muſcles but gently larded, in compariſon of *Europeans*, and therefore are not ſo ſubject to this diſeaſe; and truly there is a good reaſon to be aſſigned for it; ſince

ſince *England* is well known to be placed in a latitude which affords a contrariety of weather, and the air in it conſiſts of different ſubſtances in different ſeaſons of the year. In froſty weather it is impregnated with a large quantity of nitrous ſalts, which are of an acid nature, and ſufficient to produce an inflammation and mortification on the muſcles, were they not prevented by the oil I now ſpeak of, which ſhields, obtunds, blunts, and at the ſame time nouriſhes and comforts them, theſe being the general uſe, firſt intended by the *great creator*, for this univerſal membrane.

The *Weſt Indians* have no occaſion for ſo great a ſtore of lubricating fat, ſince theſe iſlands are ſo far ſtrangers to froſt, that it is not very common to meet with a cool breeze of air; and further, that the climate will not permit any ſtrong exerciſes, therefore there is leſs occaſion for lubricating oil to their muſcles. We may alſo impute their fair complexion to the ſmall quantity of fat in this membrane. I have often remarked, that a very fair lady has, in a very few months after her arrival in *England*, changed to a brown complexion, which can proceed from nothing leſs or more than a plenitude of oil being thrown in this reticular membrane.

*There are ſome other pre-requiſites to be conſidered, as pre-diſpoſing the body to receive the morbid effluvia of the air, I mean* water *and* vegetables, *which I ſhall conſider; and then, as theſe ſheets may fall into the hands of* Weſt Indians, *I ſhall point out a method to manage themſelves in ſuch ſickly ſeaſons, and ſubjoin the contents of thoſe two lectures on this ſubject, read before them a little before I took my leave of* Barbadoes.

The firſt thing to be conſidered, in regard to a change the animal body is ſubject to undergo in this iſland, is that univerſal vehicle, which is ſo neceſſary to health and life, ſo ſerviceable in preparing our bread, food, and drink, and without which nature cannot ſubſiſt, I mean *water*, which, in its paſſage through the body, produces effects ſuited to the principles it abounds with; for although it is generally ſaid, that ſuch water is good, wholeſome, and beſt, as is lighteſt, yet I think it may be allowed, that the water to be preferred is that which is moſt limpid and free from heterogeneous particles, ſoft, thin, ready to paſs eaſily thro' the excretory veſſels of the body, and fit to waſh off and diſſolve all thick and viſcid juices.

Rain

Rain or river waters are poſſeſſed of theſe ſalutary qualities, more eſpecially if the latter have a ſwift courſe, or run very rapidly from hills or mountains into plains, ſince theſe are not ſo ſubject to corruption as ſtagnating waters. they are not so subject to nourish & retain corruption.

The conſtitution of an *Engliſhman* is habituated to this wholeſome fluid, but in *Bridge-Town* (*Barbadoes*) it is not commonly to be met with. By this deficiency, therefore, the animal fluids, in ſome meaſure, undergoe a change, not only becauſe cuſtom is a ſecond nature, but alſo by the different ſubſtances with which ſuch water abounds; for all well-waters are impregnated with calcarious or other heterogeneous matter, which is ſufficiently evinced by tea-kettles, on whoſe inward ſides and bottoms their incruſtations are ſometimes very thick. Beſides, moſt well or ſpring water is loaded with ſalts of lime-ſtone and vitriol, the former can be ſeparated by diſtillation, but the vitriolic ſalts, even by the chymiſt, cannot be diſcharged, as appears by the unpleaſant and auſtere taſte remaining after experiments made for that purpoſe; ſuch waters are therefore noxious to the ſtomach and bowels, and may be ranked with a lower claſs of poiſon, becauſe

the bodies or principles they contain are indigeſtible.

That theſe waters are ſaturated with vitriol, is manifeſtly true, ſince ſome of the wells have a communication with the ſea, and the briny waters, in every part, abound with vitriolic ſalts; for if there were no ſuch ſalts in them, the ſea water might be made potable. As I am talking of well water, I mean thoſe ſprings in the bay, from which ſhips are watered.

By drinking too liberally of theſe waters, I have obſerved ſome ſailors become unhealthy, and ſcorbutic, others wan, pale, and ſwell in the face and legs. Theſe diſorders aroſe from the vitriolic ſalts converting the *materia perſpirabilis*, or tranſpirable matter, into an ichorous water, which being again abſorbed into the blood, by the veſſels, cauſes the body to fall into diſeaſes; for hereby digeſtion is weaken'd, and the orifices ſubſervient to inſenſible perſpiration obſtructed, all which prepare the conſtitution to ſuffer the moſt violent effects from the ſoutherly winds.

Beſides, we may, in a great meaſure, account for the mortality of ſtrangers from other concurrent

current cauſes, namely, that they are exceſſively fond of roots, greens, and vegetables, on which they generally feaſt with great eagerneſs; that theſe vegetables and roots are very unwholeſome, in hot and rainy weather, and are even diſtempered in themſelves, at ſuch ſeaſons, experience ſhewing us, that there is commonly a ſtrict analogy between the animal and vegetable kingdoms; that they are luxurious and even voracious eaters of various fruits, which cannot fail to injure the conſtitution, becauſe gathered before they are ripe, and the juices of ſuch unripe fruits are ſo far from ſupplying a ſalutary and balſamic nouriſhment to the blood, that they deſtroy its proper craſis, and alter that natural texture and diſpoſition in it, which are abſolutely requiſite to the preſervation of health. We find from experience, that even the juices of forced fruits, or ſuch as are by art brought to a ſeeming maturity, at an undue ſeaſon, never fail to corrupt the blood, and all the other animal juices.

We need not be ſurpriſed, that the ſailors ſhould be, in a particular manner, ſubject to this and other very terrible diſorders, when we reflect on the various hardſhips they undergo from the inclemency of the weather, a coarſe

conſiſting chiefly of pickled fleſh, unſound biſcuit, ſalt fiſh, water half putrid, conſtant watching in dewy nights, filthy and ſcurfy ſkins, through neglect of waſhing, or the want of clean linnen, ſince they have nothing to waſh their ſhirts in but urine, without regarding what diſorder any of them may labour under at that time. Their diſorders will be ſtill more eaſily accounted for, if we conſider their enormous irregularities, and want of care immediately after their arrival in the *Caribbee* iſlands, ſuch as their ſleeping on deck all night, in the open air; drinking hot and new-made rum to exceſs, without returning on board their reſpective ſhips, till ſome hours after the ſun is gone down, which is, of all other practices, the moſt dangerous in this part of the world, becauſe at this time the noxious vapours, which the ſolar rays had exhaled from the ſea, lakes, and marſhy grounds, being no longer rarified by the heat, are condenſed, and, by an augmentation of their gravity, fall down in malignant dews, pervade the pores previouſly opened by the heat of the day, enter the maſs of blood, and are intimately mixt with it; for, in this ſtate, the human body, like a dry ſponge, imbibes every ſpecies of moiſture (let its quality be what

it

it will) that floats in the atmoſphere. Hence ariſe violent heat, reſtleſsneſs, and inſatiable thirſt, and the pernicious method of alleviating theſe painful ſenſations is, to drink large quantities of cold water.

The blood and juices being thus heated and cooled, all the animal fluids muſt of courſe be proportionably vitiated; ſo that immediately after, the hot and moiſt ſoutherly winds entering the pores almoſt inſtantaneouſly, and being drawn into the lungs, muſt produce the moſt fatal effects on bodies already ſo diſtempered.

*Having now explained, in as familiar a method as I poſſibly could, the neceſſity of air, for the well being of the animal, and thoſe changes of air which naturally produce a morbid ſtate; the riſe of the yellow fever, with its train of ſymptoms, and the reaſon why foreigners are moſt infected; I ſhall now ſuggeſt a few hints towards the better government of our bodies in diſtemper'd ſeaſons, and animadvert on the common medicines that have been preſcribed for the cure of this fatal diſeaſe.*

During the late ſickly ſeaſon in 1748, many of the natives, as well as ſtrangers, ſeemed afraid of being attacked by this mortal diſeaſe, and, in order to prevent the infection, a temperate regimen, even below the cuſtomary ſtandard, was put in practice.

Therefore I think it my duty to declare frankly, my opinion, that ſuch abſtinence was abſolutely wrong, not only becauſe nature was diſappointed of her daily nouriſhment, and the ſolids thereby became flaccid, in conſequence of which the whole body muſt be proportionably weakened, but alſo becauſe ſuch a method was contrary to the practice of the *Greeks* and *Romans*, nay, to the modern meaſures uſed in thoſe countries, where endemial diſtempers are frequent, or moſt rife.

This I know experimentally to be truth, for I well remember, during my ſtay at *Smyrna*, a contagion raged univerſally, and the maxim was to drink a chearful glaſs, and live on a generous diet, and to guard againſt dejection of the ſpirits, ſince phyſicians believe, that fear and diſpondence will diſpoſe the body to diſeaſes and infections.

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The late judicious and learned Dr *John Friend* made it his practice to allow his patients to drink, even in a violent fever, at leaſt one ſixth of ſuch ſtrong liquors as were uſual in a ſtate of health; for as cuſtom is a ſecond nature, ſo the ſpirits are to be ſupported and kept up by a due quantity of ſuch things as the patient is become accuſtomed to.

From hence I conceive, the beſt method to preſerve health in time of contagion, is rather to live above than below the common ſtandard.—— Suppoſe a perſon had habituated himſelf to drink a quart of any ſort of vinous, or ſpirituous liquors, in the twenty-four hours, and ſhould in the ſickly ſeaſon reduce it to a pint, the conſequence would be a more relaxed ſtate, with an unuſual openneſs of the pores, which then muſt be diſpoſed to receive the particles of the poiſonous atmoſphere, whereas if we encreaſe our glaſs, the animal fibres will be more braced, the action of the ſolids, and motion of the fluids kept up, and the pores and other emunctories of the body more contracted, and leſs liable to be penetrated.

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That the cutaneous veſſels are capable of being thus ſtrengthened by vinous liquors, has been often ſeen and proved, ſince intoxicated people have been found ſleeping in the cold air, with their bodies half immerſed in ponds of water, and neither fever, nor any ill conſequences has enſued; and this happens becauſe all ſpirituous liquors conſiſt of an aqueous menſtruum loaded with ſalts, the more of which they abound with, the ſtronger their ſpirit will be, and therefore the air is excluded in ſuch caſes by the great quantity of ſalts locking up the pores.

As for the medicines that have chiefly been preſcribed for this diſtemper, they are thoſe which come under the denomination of alexipharmics, ſuch as *ſnake-root*, *caſtor*, *gaſcoign's powder*, *ſalt of amber*, *ſaffron*, *volatile ſalt of hart's-horn*, *&c.* and theſe are waſhed down with ſome high cordial julep, and of this claſs each practitioner chuſes his favourite. I ſhould think that all medicines of this nature are highly improper, becauſe they raiſe violent heat in the ſtomach and bowels, and great commotions in the blood, promoting diſorders and tumults, by exciting the animal ſpirits to encounter afreſh with the already too powerful

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diſeaſe; conſequently they interrupt the work of nature, who is always apt to throw off, and diſpume whatever is noxious and injurious to her. Beſides, medicines of a hot nature can never break aſunder the coheſion of the now magnified globules, nor can they thin the viſcid blood, or reduce it to ſuch a fluidity as to enable the deliterious particles to paſs through the natural emunctories of the diſtempered body.

From theſe traces faithfully followed, if I may ſo ſpeak, to the fountain head of the diſeaſe, we may, as I conceive, deduce a more rational and juſt method of treating it, than any that has hitherto been put in practice: Let us, therefore, boldly puſh forward, in order to expel, if poſſible, this daring and oppreſſive invader of the healths and lives of mankind.

I ſhall venture to declare my opinion concerning a method of treating thoſe whoſe miſfortune it ſhall be to labour under this diſeaſe, or any other diſorder which either reſembles it in ſymptoms, or ſeems to ariſe from the ſame cauſes. I could have wiſhed, however, that it had not fallen to my lot, ſince it has always been my averſion to ſpeak on a ſubject

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which comes not properly within the ſphere of a ſurgeon*; and eſpecially ſince this diſceaſe has baffled the attempts of every phyſician from the firſt ſettlement of this colony.

Three things are neceſſary to conſtitute a good practitioner, which will guard him from running into raſh and dangerous experiments.

Firſt, A ſufficient acquaintance with the original cauſe and pernicious principles, whence a diſtemper takes its riſe.

Secondly, A knowledge of ſuch medicines as have a tendency to remove it.

Thirdly, A capacity to diſtinguiſh the preciſe times and ſeaſons when ſuch medicines are to be exhibited with the greateſt advantage, according to the various ſymptoms and ſtages of the diſtemper, as well as the different conſtitutions, habits, and temperaments of patients.

Medicines of the diluting and refrigerating kind ſeem to me moſt likely to afford relief;

* This eſſay conſiſts of the ſubſtance of ſome lectures, compoſed and read publickly at the earneſt requeſt of the gentlemen of *Barbadoes*.

becauſe they will by mixing with the blood render it of an equal fluidity, and when this is obtained, the morbid or noxious particles will be enabled to run through the cuticular veſſels, kidnies, excretory glands in the groin, and all the other emunctories of the body; on which the patient will fall into a regular and univerſal ſweat, by which he will find himſelf freed from a parched and ſcorched ſkin, rigidity of the nerves, with tremor, reſtleſsneſs, interrupted pulſe, and all the train of melancholy ſymptoms. Such medicines are very likely to contemperate and ſooth the violent hurry and tumult of the animal ſpirits, allay the febrile heat, relax and looſe the membranes, and reſtore the body to a quiet and ſedate ſtate; and all theſe comforts are obtained by thinning the viſcid blood, which ſeems to be the moſt proper curative intention.

What I mean by diluters, are ſuch medicines as will reſolve the inſpiſſated blood, and at the ſame time waſh off the ſlime, which too often adheres to the mouths of the veſſels. But ſince multiplicity of medicines makes the cure doubtful, it is much more prudent to confine ourſelves to few, and thoſe moſt efficacious. Preſcriptions crouded with various ingredi-

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ents, proves that the preſcriber wants a certain knowledge of the diſeaſe as well as of the method of cure. Let us then proceed to conſider the effects of particular medicines and practices: And firſt of bleeding.

This evacuation demands a nice and diſcerning judgment as to the time when it is to be undertaken; ſuffer me, therefore, to premiſe ſome neceſſary obſervations, in order to prevent miſtakes.

The blood conſiſts of red globules or particles floating in an aqueous liquor, call'd ſerum. A due proportion of this ſerous fluid is a neceſſary agent to health, for a free circulation is in a great meaſure perform'd by it, and theſe globules are conveyed through the minuteſt canals to all parts, ſince each of them may be divided and ſubdivided *ad infinitum*, notwithſtanding their ſpecific gravity is greater than that of their vehicle.

Mr *Lewenhoeck* has computed the length of one globule of human blood to be the one thouſand nine hundred and fortieth part of an inch, and conſequently with how much eaſe can ſuch minute bodies be compreſt into oval forms,

forms, whenever it ſhall happen that their globular ſtate is too large for the diameters of the capillary canals, through which they ought to paſs.

This admirable contrivance ought to make us adore the infinite wiſdom of the ſupreme being. The uſe of ſuch minute and changeable bodies, is an amazing inſtance of creative art; they being apparently ſo contrived, as that they might expeditiouſly paſs through thoſe tubes whoſe orifices are ſmaller than the minuteſt hair, ſince ſuch circulation is abſolutely neceſſary, both for preſerving and reſtoring health.

Again, we muſt remember that the motion of theſe bodies is accelerated by the preſſure of the air, ſo that they circulate with great velocity when the body is free from diſeaſes; but when their motion is leſſened, the particles will unite with each other by the known laws of attraction: Therefore, whenever this happens, the conſequence is a diſtempered blood, with a low and languid ſtate; and from hence we may account for the laſſitude, the low and interrupted pulſe, which is one of the diſtinguiſhing prognoſtics of the diſeaſe. 'Tis alſo

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to be obſerved that whenever there is either a deficiency, or a redundancy of ſerum, the body muſt fall into a ſickly and languid condition; for if there is a want of ſerum, the round red globules will cohere together in great numbers, and form bulky bodies; if, on the other hand, there is too much ſerum, the veſſels will be over-diſtended, and thereby loſe their contractile or muſcular action.

Theſe, perhaps, ought to be conſidered and underſtood, ſince they will teach us how and when to adminiſter ſuch medicines as have a tendency to afford relief.

Hence we may learn to explain the intermiſſions of the pulſe, ſtartings, and anxieties of the patient, ſince theſe rigid and magnified globules being too large to paſs through thoſe veſſels whoſe orifices are narrow; the pulſe ſtops as it were on a ſudden, afterwards jerks on again, and at laſt recovers its natural courſe with greater velocity than before: But in a ſmall ſpace of time another interruption of the ſame kind recurs, and the like cruel ſymptoms will ſucceed whenever theſe red globules come into contact with each other; for they cohere much in the ſame man-

manner as a thouſand globules of quick-ſilver will rejoin upon touching each other, and form one fluid: Whenever this happens in any of the capital veſſels, terrible ſpaſms ſucceed, and often death only puts a period to the diſtemper.

I have inſiſted the longer on this ſeeming digreſſion, becauſe the whole art of curing depends chiefly on the doctrine of the circulation, and a knowledge of the blood; as alſo, becauſe an adequate idea of the circulating fluid being formed, we may be thereby enabled to conceive how far bleeding can be neceſſary in this tyrannic diſtemper.

Veneſection on the firſt aſſault of the diſeaſe will aſſiſt us much, and it is the propereſt method to be taken; for this diſeaſe is partly brought on by the maſs, or quantity of blood being encreaſed from the lubricating oil, which being firſt made liquid by the heat of the climate, as I have before ſaid, is then abſorbed into the blood, (which before this addition was too much rarified) and produces ſuch violent inflammations and obſtructions, that unleſs they are remedied in a few hours, death in two, three, and at moſt in four

Days, closes the scene: Therefore I not only say bleeding is always necessary, but it ought to be repeated again and again, according to the force of the disease, and the strength of the patient. This evacuation frequently renewed, will unload the vessels of the superfluous quantity that has been absorbed; and as on these operations the velocity of the blood will be encreased, and room procured for its free circulation, whereby some of the obstructed vessels will be relieved. There is a further advantage to be reaped from bleeding, which is, preventing the globules from cohering, as well as compeling them to separate from each other, whilst they strongly rub and strike each more frequently in their thus accelerated circulation.

The muscular coats of the arteries will, by bleeding, also be freed from their too great distention; consequently they will once more recover their natural contractile force, and be enabled to drive off whatever remains of obstruction, even in the minutest vessels.

The doctors at *Martinique*, *Guardalope*, *Dominique*, and the other neighbouring *French* islands, always have followed this practice, when

when their patients were attacked with the yellow fever, and I am informed that they have had much ſucceſs from their method. Don't we read that the *Egyptians*, *Greeks*, *Arabians*, and *Romans*, generally preſcribed bleeding in violent fevers, or when the patient laboured under the following ſymptoms; fits, ſleepineſs, watchings, heavineſs, or pain in the head, which were for the moſt part relieved by this operation? Hence we underſtand the propriety and advantage of veneſection, on the firſt attack of this diſorder, when the pulſe is very high, ſtrong, and hard.

We may be taught from hence to forbear veneſection, if the patient has been afflicted near thirty hours, for in ſuch a caſe the blood muſt be in a ſtate of coagulation, almoſt indiſſoluble, and its globules inſeparable, ſo that an evacuation of blood, would give a greater power to the now too encreaſed bodies to join each other; the ſerum, or vehicle of the blood being partly taken away, or drawn off, the remaining blood will be left with a greater proportion of ſolid globules. At this period, therefore, we ought liberally to exhibit ſome attenuating fluid, and uſe

other evacuations (which I ſhall ſpeak of) to ſeparate the globules. I ſhall now proceed to the operation of emetics.

Theſe ſeem likely to be of uſe, ſince practice teaches us that the heat, action, and juices ſubſervient to digeſtion, will frequently change the qualities of medicines before they can be received into the blood, and produce the deſired effects; therefore in the firſt ſtage of the diſtemper (after veneſection) it appears highly neceſſary that the *primæ viæ* ſhould be cleared, and a period put to the black vomiting, that the ſtomach and bowels may be diſburthened of their offenſive contents, ſuch as yellow and black bile, which if once ſuffer'd to enter the road of circulation, and be intimately combined with the blood, will ſoon vitiate the whole maſs of fluids, bring on obſtructions in the arteries and veins, with inflammation on the liver, and all the viſcera and glands of the body, producing thoſe ſymptoms from which this diſeaſe takes its name.

Another benefit may be received from the ſhock the whole body undergoes from an emetic: It is by this additional motion that the magnified globules of the blood may be broken, and

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divided into ſo ſmall bodies, as to be diſcharg'd thro' the emunctories of the ſkin.

The *vinum ipecacoanhæ* is a good medicine for this intention, and well calculated for a *Weſt Indian* climate, ſince it can undergo but little, if any, alteration from the impure air; whereas its root or powder in a few weeks will rot, and by a corrupted fermentation will produce little worms, as I have ſeen in this drug and rhubarb: Beſides, as a medicine, it is much preferable to the powder, becauſe diveſted of the reſinous parts; for reſinous medicines inflame the nervous membranes.

In the laſt ſtage of the diſeaſe emetics are to be avoided, becauſe the inflammation has ſeized the ſtomach, as appears by the violent vomiting, gripings, ſickneſs, and ſpaſmodic twitchings: When theſe ſymptoms appear, we muſt forbear this operation, leaſt by over-diſtending the now inflamed nervous membranes, we ſhould bring on immediate death: Therefore clyſters, frequently repeated, will in this caſe beſt aſſiſt us.

Theſe are ſo well known and underſtood, that I need ſay but little in their recommenda-

tion; let it therefore ſuffice to ſay, that they are not only uſeful from the firſt attack of the diſtemper, but alſo neceſſary to be perſiſted in throughout the ſeveral ſtages of this malady; for the bowels being emptied and cooled, the tumult of the blood is ſomewhat quieted, and at the ſame time the inteſtines comforted and cheriſhed, by the warmth of the fluid injected, as alſo the excrementitious filth invited downwards, which lodged above the reach of the medicine, and by ſuch treatment the bowels become ready to receive, as well as capable to carry off the diſtemper, whenever nature is endeavouring to deſpume the peccant matter, or form a criſis this way. I ſhall conſider now the nature of bliſters.

It ſeems this evacuation has among ſome * practitioners in *Barbadoes* cauſed no ſmall controverſy; but for what reaſon this ſalutary application ſhould be objected againſt, I never could learn; for if it be needful to raiſe the ſpirits, rouze the humours, encreaſe the velocity of the blood, unbar the cutaneous veſſels, and promote ſweat and urine, certainly its help in the preſent diſtemper ought to be called in.

* Dr *Hillery*, *Rotherford*, and *M'Namara*,

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I have heard many of the practitioners say, that blisters have long since been tried, without the expected success. Bleeding, emetics, and clysters have also but a little availed: All this I grant; but to fix the time when an application is to be made is of the last importance. Let us, therefore, for the future begin the cure where usually some have ended it, for it is then only that we may expect to give relief. To evince that this application has been successfully used in endemial and contageous diseases, as well as the plague itself, permit me to adduce a few authorities.

About one hundred and twenty-eight years ago, epidemical diseases spread thro' all *Italy*, and after many disputes concerning blisters among the most skilful physicians, *Hieronimus Mercurialis*, a native of *Forli* in the popes's territories, and an eminent practitioner, reviv'd the external use of cantharides, even in pestilential diseases; in which he affirms that they are of singular efficacy.

Near fifteen years afterwards the plague broke out at *Pesaro* in the gulf of *Venice*, at which time lived one *Hercules de Saxonia* of

*Padua*, who wrote three books on the uſe of cantharides: His arguments were ſo ſtrong for bringing this medicine into external practice, that notwithſtanding an obſtinate party was formed againſt him by the ſenior phyſicians, yet he was follow'd by all honeſt men of judgment, and his uncommon ſucceſs ſoon convinced his enemies of their errors.

About the beginning of the year 1665 epidemic diſeaſes raged terribly in *England*, at which time lived Dr *Sydenham* in great repute. His ſkill in phyſic, and his judgment in diſeaſes were remarkably eminent, and as he practiſed with much ſucceſs, ſo we find he liberally preſcribed bliſters, with no ſmall applauſe, in thoſe mortal diſtempers. In his ſecond chapter on epidemical diſtempers, page 157, he ſays, 'I proceeded in the following manner, 'viz. I took ſpecial care firſt to bleed in the 'arm, and took away ſuch a quantity of blood 'as was agreeable to the ſtrength, age, and 'other circumſtances of the patient, and al'moſt at the ſame time I applied a *large** '*bliſter* to the neck.

* The *Latin* word *largius* here ſignifies no other than *large*, or *ſizeable*.

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By the word *large* I conceive he meant one that exceeded the uſual ſize made uſe of before this period, for very ſmall pieces had been uſually applied, as appears from the writings of *Banzer Auguſtanus*, wherein he orders, that they ſhould not exceed the breadth of a crown piece; and *Etmuller* followed the ſame practice.

I could recite the authorities of many eminent men and modern authors, for enforcing this good piece of practice, but I am afraid, I have been too prolix already, and I think there is no farther occaſion for explaining ſo obvious a truth, ſince it has been long known, that the want of *momentum* is to be relieved by *ſtimulants*.

Having with the utmoſt candour delivered my private opinion on two malignant diſeaſes, explained the nature of putrefaction and contagion, and accounted for the periodical appearances of peſtilential diſeaſes in particular climes and countries; I muſt now ſubmit the whole work to the conſideration of my readers; that by narrowly inſpecting into the various temperaments and conſtitutions of the afflicted, they may be able to diſcover more perfectly thoſe things which may anſwer the ſame good ends and intentions which I have perſued.

Beſides,

Beſides, by ſearching into the labours of the learned, and by ſtrictly obſerving, the ſymptoms of the afflicted, time may make our endeavours perfect, together with the aſſiſtance of him, who alone can give ſucceſs to our attempts, as it is from this fountain that all good flows.

I hope, I have at leaſt contributed, by this performance, ſomething to knowledge and health, and left an open field to others for a more extenſive enquiry.

*Multa inſuper latent adhuc in arte noſtra (medicina ſcilicet) quæ fortaſſis in lucem aliquando dabit tempus.*

CORNINGIUS,

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# APPENDIX.

AFTER I had compiled the foregoing ſheets, an eminent merchant ſent me Dr *Mordach Mackenzie*'s letters concerning the Plague at *Conſtantinople*, as they were read before the Royal Society, in 1752; an abſtract of which is here neceſſary.

In a letter to Dr *Mead*, dated the 29th of *October*, 1750, from *Conſtantinople*, he gives an account of a ſummer which paſſed without any Plague, and deſcribes it in the following words:

'This is the only ſummer, ſince I have 'been in *Turky*, that I can ſay we have been 'without any Plague. The *air* was temperate, 'no heavy rains; *high winds at* N. E. *from* 'which point our Eteſian *winds blow*, common-'ly called *Milhem*, in the *Turkiſh* language. 'Fruits have not been ſo plenty, or of ſo good 'quality as uſual. Few fevers of the intermit-'tent kind, but not ſo regular as uſual in their 'ſymptoms, *&c.*'

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This account is conformable to my quotations from *Hippocrates*, and many other authors. And as the fruits were not plenty, nor ſo good in quality as uſual, probably leſs of them were eaten; therefore one cauſe operated leſs towards propagating the diſeaſe amongſt the meaner ſort of people. As there were neither *heavy rains*, *hot* and *moiſt air*, nor *ſouthern blaſts*, the plague could not be propagated this year for want of theſe materials.

*Dr* Mackenzie *writes to Dr* Clephane *in the following terms:*

*Conſtantinople*, July 23, 1751.

"WE have at preſent the moſt violent Plague that has ever been at *Conſtantinople*, in my time, by all reports; for I know nothing of it, as I live at the mouth of the *Black Sea* for ſecurity; but, as I am informed, few or none eſcape, which ſhews that the malignity is not come to its ſtate. They are all taken the ſame way, with a ſhivering and vomiting, a violent head-ach, thirſt, and fever, of which they die the third or fourth day, rather in a ſtupor than a delirium; and ſuch as have the misfortune to be near the infected perſons are taken in ſeven or eight days, though there are many inſtances to the contrary. I preſume

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many die of other diſeaſes, which are all laid to the account of the Plague; for there is no other mentioned at preſent. The *Greeks* and *Armenians* ſuffer moſt, next to them the *Jews*. The *Turks* ſuffer leſs in proportion than other nations. The *Franks* have hitherto eſcaped, excepting one jeſuit prieſt, who waited on the Chriſtian ſlaves in the grand ſignior's bagnio, and died three days ago."

It may be obſerved, that the doctor gives this account upon report only; for he confeſſes he knows nothing of it himſelf, as he lived ſo far diſtant as the *Black Sea*. However he has very well remarked, that the diſeaſe was not at its height the 23d of *July*, becauſe few or none eſcaped; for it is certainly true, as has been for ages obſerved, that more people die on the firſt appearance of any malignant diſeaſe, than at the decline, or its going off.

The deſcription of the ſymptoms is conformable to thoſe of the Plague, and his obſervation of many dying of other diſtempers at the ſame time, and being charged to the account of the Plague, is very juſt, and conformable to what was ſuſpected in the time of its rage in *London*, *Marſeilles*, and many other cities.

But why the *Greeks*, *Armenians*, and *Jews* ſhould ſuffer moſt, and the *Turks* leſs, I think he might have explained; for probably, the deſtruction of the Jews in this city, (like thoſe in *Cracow* in 1653, of whom there died 20,000, and of Chriſtians only 17,000) was owing to their uncleanlineſs and living in narrow ſtreets and lanes, where filth more frequently abounds.

Why the *Greeks* ſhould die in greater numbers than the *Turks*, I cannot account, unleſs it had been ſaid, that they were not natives of that country, or that they were the meaneſt of the inhabitants. The *Greeks*, for years paſt, have been put under heavy contributions by the *Turks*, and at this time are poor, therefore are more ſubject to ſuch diſtempers.

As to the *Armenians*, they are as fond of travelling from one nation to another as the Jews, therefore, not being natives, the diſeaſe would attack more of them than of the Mahometans; for endemial diſeaſes ſooner ſeize ſtrangers than the inhabitants of the country. This holds true in regard to the yellow fever, of which at leaſt 20 *Europeans* die to one *Creolian*.

*The next letter is to Dr* Clephane, *dated at* Conſtantinople, Nov. 23, 1751. *It is in anſwer to the queſtion aſked,* Whether he can account, from any apparent cauſes, *for the preſent violence of the Plague?*

"DUring the twenty long years, ſays he, I have lived here and at *Smyrna*, there has ſcarce been a year, excepting three, in which the Plague did not threaten more or leſs; and in all that interval I obſerved no other difference in the ſeaſons, than that the winters might begin more early, and continue ſomewhat longer, and with greater rigour; though, by my thermometers, this difference never exceeded five or ſix degrees, which is no great difference here, where the ſouth and north winds make a difference of 15 to 20 degrees, in 24 hours. So that I can't ſee any other apparent cauſe of the virulency of the diſeaſe this year, beſides the occaſion of greater communication.

In the months of *February*, *March*, *April*, and *May* laſt, the diſtemper was ſo great at *Cairo*, as appears by letters from the *Engliſh* conſul there, that no doors were opened for three months. In the mean time there arrived here

here in *May* laſt, four ſhips laden with *Cairo* goods, which goods and men being landed, ſpread the infection over all the city at once, after which, one conveyed it to another by contact.

The only apparent cauſe of the virulency in this caſe is, four ſhips arriving from *Cairo*, inſtead of one or two, at the ſame time; and, if you pleaſe, you may add to this ſome little difference of the ſeaſons, mentioned in my letter to Dr *Mead*, and a greater quantity of cucumbers, melons, and fruits, than uſual, upon which the poorer ſort of people feed. However, I don't believe the number of the dead any-ways equal to common report.

The *French* embaſſador's palace, next door to us in the village, was infected, becauſe five of his people went at midnight to a bawdy-houſe, where the father *Demetry*, the mother, and daughter, at the ſame time, had the plague, and died of it afterwards all three; ſo that two of his excellency's ſervants were infected by them, one of whom died, and the other recovered, and is ſtill living, after taking a vomit, *&c.*

Next I muſt obſerve to you, that there are two vulgar errors, with regard to the Plague, eſtabliſhed in this country: They ſay, that a Plague which begins early ends ſoon; which is falſe, for in the year 1735, the Plague began at *Smyrna* the 15th of *February* (by means of a veſſel which conveyed it to *Candia*, as 'tis ſaid) very hot, ſo that all the houſes in *Frank-ſtreet* were ſhut up in *February*, and it continued to the latter end of *November*.

Another vulgar error is, that the heat kills the Plague at *Smyrna*, and the cold at *Conſtantinople*; which is very true, in regard to *Conſtantinople*, but very falſe, with regard to *Smyrna*. For proof, look back to the year 1735, when the vigour of the malady ſhewed itſelf moſt in the months of *June* and *July*, tho' ſo very hot, that ſome people were ſaid to die of the heat in going from the town to the villages near it; ſo that it is very certain, the heat does not kill the Plague at *Smyrna*, as is generally thought and ſaid."

I think this laſt account muſt be imputed either to prejudice or want of due conſideration. For he anſwers firſt to the queſtion

aſked, ambiguouſly, by ſaying, " that the three years intervals of the Plague were owing to the difference in the ſeaſons; that the *winters* might begin more early, and continue ſomewhat longer, and with greater rigour. Then ſays, " *I cannot ſee any more apparent cauſe of* " *the virulency of the diſeaſe, than greater com-* " *munication*;" and charges it to the merchandize of *Cairo* being brought in four ſhips. As to the firſt point, it is certain, that the length and rigour of theſe winters made the country healthy; but it is not very clear, whether theſe ſhips did bring the diſeaſe, or not: for I would aſk, Whether *Aleppo*, *Smyrna*, *Scanderoon*, *Conſtantinople*, *&c.* were never attacked, with the Plague but when goods were brought from *Cairo* to them? Alſo, If this city was not infected before theſe ſhips arrived? For, from *Grand Cairo* to the harbour for ſhipping is near two hundred miles over land; and therefore if the goods were ſo infected, the caravans muſt have diſtributed it in every village they paſſed through, and the travellers themſelves would have been deſtroyed. Of theſe material circumſtances not a word is ſaid, therefore I conclude, that no ſuch misfortunes did happen.

He tells us, that theſe four ſhips arrived in *May*, and as ſoon as the goods and men were landed, the infection ſpread *over all the city* at once. This is impoſſible, for no perſon can receive an infection by contact, without approaching the thing or perſon diſtemper'd; and it is highly improbable, that 30,000 people ruſhed at once upon ſo mortal an enemy.

The doctor informs us, that *the infection ſpread all over the city at once; after which, one conveyed it to another.* If he had obſerved the nature of the air and winds, he would have ſaid, the infection was in the air, and ſpeedily ſpread itſelf over all the city; for a whole city, in 24 hours, cannot be diſtemper'd by contagion, *but it may by an infection in the air.*

Again, he aſſigns this Plague to four ſhips arriving inſtead of one or two. I ſhould conceive, if goods could bring a Plague, one ſhip would infect a city as much as ten; for according to this old ſort of doctrine, they may remember, one leather coat killed 10,000 *Germans.*

Let us now examine his next letter, which will ſhew us, that a malignant fever raged in

*Conſtantinople* before theſe ſhips arrived with merchandize from *Grand Cairo*, and then we ſhall ſee how far this gentleman is a zealot to his late correſpondent's opinion, as well as be enabled to ſet this affair in a clear light.

*The fourth Letter is to Dr* Mead, *and bears the ſame date as the laſt wrote to Dr* Clephane, *viz.* Nov. 23, 1751.—*In this he mentions the Plague of the preceding ſummer as the moſt violent of all others that happened in* 20 *years, for* 150,000 *ſouls died in* five months.

"IT is related, that the winter began early in *November*. About the beginning of *January* following the ſmall-pox was very frequent, but not mortal, being for the moſt part of the diſtinct kind. It continued to the latter end of *March* 1751, when *malignant fevers began*, and *continued till the middle of May*, when four ſhips arrived from *Cairo*, with the Plague on board, which got to a great pitch by the 10th of *June*, and extended more and more till the middle of *Auguſt*, when, after a deluge of rain, thunder, and lightning, it was much abated; but it recover'd its ſtrength again, about the beginning of *September*, which it retained till the middle of *October*, when, after

after ſome ſnow and cold weather, it *entirely ceaſed*, and we are under no apprehenſions from it, for this winter. 'Tis true, ſome accidents may happen in houſes which were once infected, and not well purified, all winter long, but they are ſo rare, that they deſerve little or no attention.

I remember to have had the honour of writing to you my ſentiments of this diſtemper ſome years ago; and from all the obſervation I could make in the interval, I have no reaſon to change my opinion, *viz.* that it it is brought from *Cairo* commonly; and, that when once a houſe or ſhip is infected, it is very difficult to eradicate the *animalcula*, *ſemina*, *effluvia*, *miaſmata*, or whatever name is proper for the reliques or remains of it, which getting once into a *nidus*, lodge there, condenſed by the cold during the winter, and when rarified by a certain degree of heat, they act upon bodies which have a diſpoſition, as women and children moſtly, and ſo ſpread by *contact only*, *without communicating any malignancy to the ambient air*, otherwiſe, very few would eſcape; whereas we found this laſt time, and upon all ſuch occaſions, that whoever kept their *doors ſhut*, *ran no riſque*, even if the Plague were in the

next houſe, and the contact was eaſily traced in all the accidents which happened amongſt the *Franks*. *Comte Caſtellane* had, for three years running, perſons attacked in the ſame room in the months of *July* and *Auguſt*, notwithſtanding all poſſible precaution uſed in cleanſing the room, and even white-waſhing it. At laſt, by my own advice to his Excellency, grounded upon the above theory, he built a ſlight counter-wall; ſince which there has been no accident in that room, now five years ago."

I ſhall take notice of this letter more particularly, ſince moſt of it correſponds with the favourite opinion long entertained by the perſon to whom it was ſent; and not only ſo, but as the Plague here deſcribed, as to its breaking out, the arrival of the foul ſhips, and other circumſtances, bear a great reſemblance to what happened, and has been deſcribed in the plague at *Marſeilles* in 1720.

By this letter we find, that 'the ſmall-pox 'began in *January*, and continued to the latter 'end of *March*, when *malignant fevers began*, '*and continued to the middle of May*, then four 'ſhips arrived from *Cairo*.'

As

As the ſhips did not arrive till the middle of *May*, how is it poſſible, to charge them with a malignant fever, which was rife the latter end of *March*, all *April*, and the middle of *May* before; for certainly the epidemic was ſpread abroad more than ſix weeks, before the four ſhips arrived at *Conſtantinople*, by his own confeſſion.

He goes on, 'The diſeaſe got to a great 'pitch by the 10th of *June*, and extended 'more and more till the middle of *Auguſt*.' I doubt not but this deſcription is juſt, and the reaſon of its continuance was the want of the N. E. gales, the ſouthern hot winds continuing all the time. And indeed I ſhould not have been ſurpriſed if it had laſted a year; for if the ſame hot winds had continued, the *pabulum* would have been ſtill ſupplied. Now his own words are convincing proofs of my aſſertion, ſince in one part he confeſſes, that a deluge of rain, thunder, and lightning greatly abated its fury for a time, and that it entirely ceaſed the middle of *October*, *on ſnow falling and cold weather ſetting in.* Nay, further, he writes, that 'we are under no apprehenſions 'from it this winter,' Very true! becauſe the *Eteſian* gales had ſet in. A culinary fire will

continue in vigour as long as it is ſupported with proper materials, and on the contrary will be extinguiſhed by oppoſite qualities; this holds true in regard to a peſtilence.

In the next paragraph we are inform'd of his opinion given on the plague to Dr *Mead* many years ago, and that he continues in the ſame mind, *viz.* That the plague is commonly brought from *Cairo*, and that it is very difficult to eradicate the *animacula*, *ſemina*, *effluvia*, *miaſmata*, or whatever name is proper for the reliques, or remains of it, *&c.*

To this, I anſwer, that grand *Cairo* is not the only city afflicted with the plague, though Dr *Mead* would have us believe (as well as this gentleman) that moſt plagues are bred originally and nurſed in it, and from thence propagated to other nations. Before Dr *Mead* was born, the *Eaſt Indies* felt many plagues, and in his time, this diſeaſe has invaded that part of the world almoſt every year. In 1346, the plague broke out in *China*, travelled thro' the *Indies* into *Syria*, *Turkey*, *Greece*, *Egypt* and *Africa*; and ſpread itſelf in four years through almoſt all the world, which I conceive is ſufficient to over ballance ſuch conjectures.

Again,

Again, when once a houſe or ſhip is infected, it is very difficult to eradicate the *animalcula*, *ſemina*, *effluvia*, *miaſmata*, &c. The doctor muſt ſurely here mean no more, than that it is very difficult for the art of man to eradicate the plague; for it is evident that all human knowledge can never change the winds and ſeaſons.

*The next Letter is dated from* Conſtantinople, *the 23d of* April 1753.

"AS a corollary to my former accounts ſent to Dr *Mead*, pleaſe to know, that on *January* 3, 1751. there was an accident of the plague, when the thermometer was at 53. *January* 24, another accident, thermometer 52. *January* 26, an accident at *Buiukdere*, thermometer 51. *February* 10, an accident in *Galata*, thermometer 55. patient recovered. *February* 15, another accident in the ſame houſe, thermometer 53. *March* 8, an accident in *Galata*, thermometer 56. and not one accident ſince, tho' at preſent the thermometer is at 50, and has been at 44. this 16th inſtant; ſo that we have great hopes to get clear, if no infection is conveyed to us from any other quarter."

"To

" To ſatisfy you how I came to be ſo exact in dates, it is proper to inform you, that I have kept ever ſince I have been in *Turkey*, a journal of the thermometer, barometer, winds, weather, diſeaſes, and other events, which I mark down exactly every 24 hours."

" *Proſper Alpinus* obſerves, that the *Eteſian* winds at *Cairo* remove the plague entirely, ſo that they fear nothing after theſe winds begin. And I can aſſure *bonâ fide*, that all the plagues which have been at *Smyrna* and *Conſtantinople* for theſe laſt 20 years, have been hotteſt and moſt violent during the ſeaſon of the *Eteſian* winds; ſtill allowing, that were it not for the *Eteſian* winds, the plague would be moſt violent in hot months. Witneſs, the 24th of *June* 1735, there being no wind, the ſickneſs ravaged more than any other day, while it laſted."

" It ſeems to me uſeleſs to put a ſhip's company from the *Levant* to quarantine in *Britain*; for how is it poſſible for men, who have been one or two months at ſea, toſs'd about with different winds and weathers, and arriving, af-

ter

ter ſuch a time in good health in *England*, can have any infection in their bare bodies."

In the firſt part of this letter he gives ſix caſes of the plague happening between the 3d of *January*, and the 8th of *March*; and calls them *accidents*, I ſuppoſe from the novelty of finding ſuch caſes ſo early in the year. I wiſh he had out of his curious obſervations on winds and weather, let us known from what points the gales blew; however, by theſe hiſtories, they ſeem to me to have blown *indifferently any where*, or *any how*, ſo far as I can judge by the ſtate of the diſtemper, becauſe the diſeaſe was not regular, but it jump'd from one date to another; ſo that the difference as to time from the firſt to the prov'd caſe, from the 3d of *Jan.* to the 24th. As diſeaſes then are known to increaſe and decreaſe according to the weather, ſeaſon and winds, (or we muſt not believe the accounts of hiſtorians, travellers, and phyſical writers, who have lived in countries ſubject to epidemical and endemial diſeaſes) ſo from the irregularity of the diſeaſe deſcribed, we may form a judgement how theſe accidents happen'd by the winds ſhifting, or changing round the compaſs.

As

As to what *Prosper Alpinus* says, it is no more than what many eminent men have observed since the time of *Hippocrates*, *viz.* *That as soon as the* Etesian *gales set in, all pestilential diseases disappear:* *Sanctorius* is very explicit on this head; for he says, *The infection can last only so long as the remote, and the immediate causes subsist*, &c.

Now this gentleman assures us that all the plagues which have been at *Smyrna* and *Constantinople*, for these last 20 years, have been most violent during the season of the *Etesian* gales; these are his words, so that all those unacquainted with the *Levant* will think that the plague rages most violent during such seasons.

I shall endeavour to reconcile this observation, by first admitting that 'tis possible for the plague to rage during the *season of the* Etesian *winds*; but then this can only happen when they blow *uncertainly*, and very *faint*, by scatter'd, weak and unseasonable blasts. On the other hand I do assert, that the plague never did, nor can rage after the *Etesian* gales set in regular, and blow without interruption; so that the only difference between Dr *Mackenzie*, and myself

myſelf in this matter, is, *ſeaſon* and *wind*. Now the ſeaſon *for winds* may happen without the *winds blowing*; as for inſtance. In the latter end of his paragraph he tells us that the violence of the *plague in* June 1735 *was greateſt*, there being *no winds*; and in his letter the 29th *Oct.* 1750, ſpeaking of a ſummer free from a plague; he ſays, The air was temperate, no heavy rains, high winds at north eaſt, from which points our *Eteſian* winds blow.

Now the ſeaſon for the *Eteſian* winds is the latter end of *July*, or the beginning of *Auguſt*; but tho' theſe are the months for them, yet it may happen that other winds may be too powerful, or it may be calm, or perhaps they may blow very weakly and faintly; and therefore in ſuch caſes, the heat will be ſo powerful as almoſt to kill travellers.

That the plagues being violent on the 24th of *June* 1735, ought to be imputed to the ſeaſon of the *Eteſian* gale, is a miſtake of the doctor's, for they never ſet in till the latter end of *July*; therefore theſe winds by him have been condemn'd before their birth.

Theſe are all the neceſſary obſervations at preſent

preſent on the doctor's letters, which I hope are now digeſted without prejudice to him, as it was not my intent, at firſt ſetting out, to caſt any imputations on the opinions of my ſuperiors; for my only motive aroſe to ſeparate the rude and undigeſted arguments from thoſe of real and intrinſic value, in order to do juſtice to the community.

As a ſpecimen of what dilemmas we are ſubject to from report only, and for the ſatisfaction of my readers, (tho' I could give many more) I have ſubjoined a particular account of the affair of the *Fawey Sloop*, which in *March* laſt made ſo great a noiſe in *England*, on account of a plague being ſuppoſed on board her; which I hope will not be thought impertinent, ſince it will convince us that the dread of a plague did ſtrike us with ſuch horrors, that we were ready to believe what we moſt feared; and therefore whilſt we continue in ſuch anxieties, we never can be happy without either putting the laws eſtabliſhed by a late act of parliament in execution, or diſbelieving ſuch reports till the facts are with more certainty proved, or eſtabliſhed on a ſounder foundation than any of the writers on this ſubject as yet have choſen for their ground work.

# AN ABSTRACT OF

# Capt. ISAAC CLEMENS' Voyage

## IN THE

# SLOOP FAWEY;

## FROM

The Arrival of that Veſſel in the Mould of ALGIER;

Taken from his LOG BOOK.

# An ABSTRACT of Capt. ISAAC CLEMENS's Voyage IN THE SLOOP FAWEY.

ON or about the 19th of *June*, the sloop *Fawey*, *Isaac Clemens* commander, sailed from the *Downs* for *Algier*, and on the 9th of *Auguſt* following, anchor'd and moored in *Algier* mould, having had light breezes at E. N. E. and N. N. E. continuing in thoſe points from the firſt of that month.

By the ſhip's log book it appears, that the next day, being *Auguſt* 10, the captain began to unload; that on the 11th a *Daniſh* ſhip arrived, with preſents for the Dey, from the K. of *Denmark*: From day-time till the 20th, the time was ſpent in unloading the ſhip, cleaning her hold, decks, caulking her ſides, knotting of yarn, and other works neceſſary for preſerving the veſſel and utenſils.

On the 21ſt began to diſcharge the ballaſt, and take in the merchandize, *viz.*

*Aug.*
- 21ſt, dry'd hides 274
- 22d, ſugar 18 caſks.
- 23d, ſugar 188 ditto.
- 27th, canary ſeed 32 bags.
- 28th, ditto 12 bags.
- 29th, bundle of ſkins 8

*Sept.* 4. Moſt of the men aſhore at the merchants, and there employed. The ſame day a *Turkiſh* embaſſador arrived from *Tunis* in a billander.

*Sept.* 7. Ship'd canary ſeed 6 bags.
Flax in bags 10

This day an *Engliſh* ſnow, and a *Daniſh* ſhip ſailed for *Europe*.

*Sept.* 10. Rec. hogſh. of wine 16

12. Ditto - - 5
One pipe - - 1
Hogſheads - - 2

13. A caſe of goods.

14. Bundles of ſkins - 8
Bag of ditto - 1

15. A *French* brig, a *Tartan*, and an *Engliſh* billander ſailed from this port.

16. Caſes of merchandize 3

17. Bags

17. Bags of wool - - 10
Pipe of wine - - 1
18. Bundles of goats ſkins 18
Bags of flax - - 2
A ſmall bag of ditto 1
19. At noon weigh'd anchor, and ſail'd out of the bay; on the 20th light winds, ſo that at noon *Cape Caſan* bore S. S. W. diſtance about five leagues. From this date to the 30th, for the moſt part light and variable winds.
30. Anchord in *Gibraltar* bay about 9 in the morning.
*October* 1. The product maſter came on board, examined the veſſel, bill of health (which was clean) order'd a quarantine of ſix days; next day weigh'd, and run up further in the bay.
5. The ſhip had product allow'd her.
6. Water'd the ſhip.
7. Took in bread, and deliver'd a bale of goods, part of her cargo, and at noon weigh'd anchor and ſail'd.
21. Spoke at ſea with a ſnow from *Dublin*, bound to *Cadiz*.
24. Spoke with the Prince *George*, from St *Chriſtophers*, bound for *London*.
25. Sounded at four o'clock, found 86 fathom.

26. Sounded in 80 fathom at 12 at night.

*Nov.* 1. Made *Uſhant*, bearing S. b E. diſtant ſix leagues.

3. Made *Guernſey*, diſtant about ſix leagues, bearing S. b E.

4. Made the *Start* bearing W. b N. diſtant five or ſix leagues, about two o'clock anchor'd in *Portland* road.

6. Sail'd out of *Portland* road about 9 o'clock in the morning for *Guernſey*, where ſhe was bound; at 10 o'clock at night anchor'd in St *Maria* road in *Guernſey*.

7. Weigh'd and run into the pier about three o'clock, alſo four ſail, anchor'd in the road by the governor's orders.

8. Received on board a caſk of bread, and one of water; about nine in the morning a boat came a longſide with an order to get under ſail, or the caſtle would fire and ſink us. It then blowing a hard gale of wind, ſent aſhore to the governor begging we might lie till the weather was more moderate, which was refuſed. At 11 unmoor'd, tho' we had three anchors down.

9. Sail'd out of St *Maria*'s road, blew hard from the E. S. E. with a ſtrong gale; ſhip'd ſeveral large ſeas, tho' under double reefed main ſail and jib; at ſeven took the third

reef

reef in of the main ſail, it being very ſqually; ſhip'd ſeveral ſeas upon deck.

11. About ten in the morning ſaw *Portland*, bearing N. E. about 6 leagues.

12. At four in the afternoon anchor'd in *Portland* road in ſix fathom water; the ſouthermoſt point bearing S. S. E. At ſix the cuſtom houſe boat came on board, and order'd us to proceed to the *Muther Bank* in order to perform another quarantine. At four in the morning weigh'd and ſail'd.

13. At ſix in the evening anchor'd on the *Muther Bank*. At four the cuſtom houſe ſmack came alongſide, and ordered us nearer into the iſland; we weigh'd and run into four and half fathom water.

*Remarks on the* MUTHER BANK.

15. Received on board one hogſhead of beer; got up ſome of the goats ſkins to dry and repack. From the 15th to the 18th employed in drying, unbending, and repairing the ſails.

*Nov.* 18, Mr *Cooley*, collector, came alongſide to take our depoſitions in relation to the people that had been on board; we informed him that Mr *Tucker*, the mayor's ſon

of *Weymouth*, Mr *Adams*, the poſt maſter, and ſeveral other perſons whom they did not know, had been on board; and that the captain, and all the people except Mr *Brown*, had been on ſhore at *Weymouth* and *Guernſey*, and had been on board the Prince *George*, Capt. *Burford*, from St *Kitts*.

20. Received on board 44 pounds of freſh beef.

24. Received on board one barrel of beer and ſome coals.

27. Received on board 37 pounds of freſh beef, and ſome coals.

*Dec.* 1. Received on board 22 pieces of beef.

5. Received one barrel of beer and ſome coals.

9. Received ditto.

12. Received more coals.

16. Received one barrel of beer and ſome coals.

22. Received ſome coals, and 26 pounds of freſh beef.

28. Received ſome coals on board.

30. Received a ferkin of beer.

31. Received ſome coals.

*Jan.* 2. Received a firkin of beer.

4. Received one buſhel of coals.

6. Received ſome coals.

7. Received 48 pounds of freſh beef, and 4 buſhels of coals.

11. Received 30 pounds of beef.

16. Re-

16. Received four buſhels of coals, and 60 pounds of freſh beef.
18. Received one barrel of beer.
19. Received four buſhels of coals.
22. Received 52 pounds of freſh beef.
27. Received four buſhels of coals and ſome beef.

*February* 1. A man of war's boat called alongſide to know from whence we came, and with an intent to preſs the men.
2. Received on board a barrel of beer.
4. Received on board two buſhels of coals.
7. Received 100 weight of beef.
8. Mr *Stiles*, the collector's clerk, came alongſide, and examined the captain concerning the cargo. Received 100 weight of beef.
14. Employed in ſhifting the canary ſeed in order to take the hogſheads from under the bags; found moſt of them knaw'd by the rats and mice. Received on board four buſhels of coals, and one barrel of beer.
15 and 16. Employed in the ſame work.
*Feb.* 18. At noon the tide ſurveyor came alongſide with a maſter builder, ſail maker, and a blackſmith. The one to inſpect into the hull of the veſſel, the other the ſails

and other materials, the ſmith to make bars to ſecure the hatches.

24. Received on board by our own boats, ſix boat loads of ballaſt, and the iron bars, bolts, and nails to ſecure the hatches.

25. Bar'd the main hatch down with four croſs bars bolted and nailed down to the deck, and thro' the hatches.

27. Received on board ſome freſh beef, ſix buſhels of coals, and half a hundred of bread.

*March* 2. At noon the *Arundel* man of war, Capt. *Lloyd*, came out of the harbour.

3. The brig came out of the harbour, and anchord along-ſide of us.

5. Received four ſmall caſks of water from the brig.

6. At eight in the morning unmoor'd, and hove ſhort on the ſmall bower. At half paſt ten Capt. *Lloyd* made the ſignal to weigh; at noon weigh'd in company with the brig *Mary* and *Elizabeth*, —— *Bayly*, commander. This was the brig appointed by the government to receive us after our ſloop ſhould be ſunk.

*March* 7. At ſix made the *Needle* point diſtant four miles; ordered to keep on the larboard of the *Arundel* man of war. At ſeven ſaw the land, bearing N. W. b N. diſtant

tant about eight leagues. At noon the *Start* point bore N. W.b N. about 5 leagues.

8. At four the *ſtart* point bore N. N. E. (the courſe being altered at 11 the day before) diſtant ſeven or eight leagues. At three the commodore brought too, to ſound. Bore away, ſteered W. S. W. At ſeven brought too under the commodore's ſtern; he ſent his boat along ſide to give us his orders, *viz.*

That he would lay too till 12 o'clock, if the wind continued, and in the morning, when he ſhould hoiſt his colours, we ſhould get our top gallant maſt, top ſail yard, and ſquare ſail yard down; and that he would ſend ſome ballaſt on board, and that we ſhould do all that was neceſſary to be done in the inſide. Sounded in 43 fathom; at ſix the commodore made the ſignal to get every thing ready to ſink the veſſel; got the top ſail yard down. Received on board from the brig two boat loads of ballaſt. At eight the commodore ſent orders to hoiſt our colours as ſoon as we were ready for ſinking. Got the boat on board, and laſh'd her down to the deck. At nine hoiſted our colours at the toping-lift; the commodore came along ſide, and ordered us to let go our anchors, accordingly we let go our beſt bower anchor, and

weered

weered it out to the bitter end; and after that our ſmall bower anchor, and weered it out one third of the cable, both cables being clinked to the maſt at the ſame time.

*Note.* She brought up by the beſt bower anchor, the tide ſetting to the weſtward, the wind about N. b W.

The manner of ſinking her was as follows, There were five auger holes boar'd on the ſtarboard bow, two of which were cut into one with a chiſſel; one ſcuttle cut in the band in the entering place on the larboard ſide; one cut by Mr *Baſkervil*'s people, by the commodore's orders, in the buttock, a little before the crutch, and the other in the waſte by myſelf, and *Nathaniel Walker*, both on the ſtarboard ſide. At nine o'clock we were ordered into the boat, where we remained at a little diſtance until ſhe ſunk, which was at one quarter paſt 10 in the morning. When we left her there was about five feet and a half of water in her hold. The *Start* point bearing N. N. E. three quarters E. diſtant 13 leagues, and about 45 fathom water.

*Saturday, March* 9. At ten at night anchor'd on the *Muther Bank* of *Woodenbridge*, in the brig *Mary* and *Elizabeth*.

## OBSERVATIONS *on the* JOURNAL.

ABout the 9th of *Auguſt*, 1753, Capt. *Clemens* anchored and moored in *Algier Mould*. The winds, for ſeveral days before, were very light, ſo that they ſcarce ſailed above two miles an hour, and what winds they had were from the north and eaſt points, which blew directly out of *Algier Mould*. The 2d, 3d, 5th, 6th, 7th, and 8th of the ſame month, they had many hours calm every day, therefore, tho' they were a day or two off Cape *Caſſan*, they not only wanted wind to carry them in, but what wind they had, blew in their teeth, and ſo it continued till the 9th, about 10 in the morning, when it was variable, afterwards blowed from the ſouth-weſt, on which the captain boldly ran into the *Mould*, and anchored.

It was reported, that the captain hovered on the coaſt ſeveral days, being afraid to go in, on account of the Plague being at that time at *Algiers*; but this was a falſe report, for the captain made an affidavit, on his arrival in *London*, that the wind was againſt him, and prevented him from getting in ſooner; and that there

there was no Plague at *Algier* at that time, nor after. This affidavit was made before the Lord Mayor.

It is ſo far from appearing, that the men were ſick, during their ſtay at *Algier*, that the contrary is ſhewn; for on the 4th of *September*, moſt of the ſhip's crew were on ſhore at the merchant's houſe, and there employed in packing the ſkins, bagging the canary ſeed, pocketting the flax and wool, and in theſe two laſt employments, what is very remarkable is, that the men got into the bags bare-footed to tread the wool cloſe down. As the veſſel was a ſloop, and but one deck, the ſailors, not only during their ſtay at *Algier*, but the whole voyage after, were obliged to eat and ſleep on theſe very goods and merchandize.

It is very true, that *September* is not the ſeaſon for any Plague being rife in *Algier*, as I have before ſhewn; beſides, the winds were chiefly from the north-eaſt quarter, which are well known to extinguiſh a Plague with as much expedition as water does fire.

The 7th of *September* a *Daniſh* ſhip and an *Engliſh* ſnow ſailed for *Europe*; and on the

15th

15th an *Engliſh* billander ſailed from this port, ſince which we have not heard of any infection either in *Denmark* or amongſt us.

The ſloop ſailed from *Algier* the 19th of *September*, and on the 30th anchored in *Gibraltar* bay. The day following, being the firſt of *October*, the product maſter came on board the veſſel, examined her and the bill of health, *which was clean*. At this time, for form ſake, he ordered ſix days quarantine, notwithſtanding which the officers were ſo well ſatisfied that the veſſel was healthy, that on the 5th day they allowed her product. The day following the crew went aſhore and water'd, and the next day, a bale of goods, part of her cargoe, was delivered to the merchants; but we are ſtrangers to any injury done to the garriſon, or any of the inhabitants. Here they bought bread for the ſhip's ſtore, *&c.* and carried it off.

On the 4th of *Nov.* the ſloop arrived in *Portland road*, where ſhe ſtayed till the 6th, during which time all the people went aſhore, except Mr *Brown*.

The

The mayor's ſon of *Weymouth*, Mr *Adams* the poſt-maſter, and ſeveral other gentlemen, were on board this veſſel for ſome time; nay, the captain converſed on ſhore with many of the merchants, treated them with almonds, *Algier* wine, and other things, which he ſent for from aboard. There is a depoſition of theſe people being on board, and it was taken by Mr *Cooley*, the collector. When the captain ſailed for *Guernſey*, they took from thence one Mr *John Slaughter* for a pilot; and notwithſtanding all theſe tranſactions, no Plague was felt by any perſon *at Weymouth*.

On the 6th, about 10 in the evening, the ſloop arrived in *St Maria* road, in *Guernſey*; next morning weighed anchor, and run into the pier. Capt. *Clemens* waited on the governor, ſhewed him his clean patent, told him he came from *Algier*, but laſt from *Gibraltar*. At this time the governor was very civil, aſked him to drink ſome Frontiniac with him, and there was no objection made. Nay, they took in bread and water, and the ſailors came on ſhore. The veſſel was conſign'd to Mr *De Jerſey*, of *Guernſey*.

It happened very unlucky for Capt. *Clemens*, as he was walking about the town, to meet (about 2 o'clock) a man who aſked him who he was, and from whence he came? The captain, not knowing him, anſwered him a little roughly, but ſaid from *Algier*, and laſt from *Gibraltar*. Some words paſſed between them, and on parting, the gentleman told the captain, that *he would make him to know who he was*.—Who ſhould this gentleman be, but the attorney general of *Guernſey*. In about an hour, or little more, a general council was call'd, at which were preſent Capt. *Clemens* and Mr **William Craſswell*, a young gentleman, who was an apprentice to a merchant at *Algier*, and a paſſenger of the captain's. The reſult of the council was, that the veſſel ſhould perform a quarantine of forty days in the *great road*.——*This account I had from Mrs* Clemens, *the captain's wife*.

To proceed to the journal,—The captain and paſſenger went on board in the evening, and about 9 the next morning the captain received orders to ſail directly, or the caſtle ſhould fire and ſink him. Capt. *Clemens* ſent to the go-

* Is the ſon of Mr *Craſswell*, Timber-merchant.

vernor,

vernor, to beg that they might ſtay till the weather was more moderate, it then blowing a hard gale at E. S. E. and very dangerous to put to ſea; however, his petition was rejected, and he was forced out, altho' at that time, he was riding with three anchors out, the ſtorm being violent.

It blowed ſo hard at ſea, that at firſt they ſteered under a jibb and a double reefed main ſail, and the ſtorm increaſing, they were obliged to take in the third reef of the main ſail, for ſafety, notwithſtanding which they ſhipped ſeveral large ſeas, and were in great danger.

I ſhould apprehend, as the ſtorm was ſo furious, the governor, attorney general, *&c.* might have been ſo humane as to have conſented to the veſſel's ſtaying till the weather abated, as the iſland could not have ſuffered by the ſhip or crew whilſt at anchor, and as there was not any illneſs on board.

I ſhould have obſerved, in its proper place, that Capt *Clemens*, in his paſſage from *Gibraltar* to *Weymouth*, met at ſea, on the 21ſt of *October*, the *Prince George* from St *Kit*'s, bound for *London*, that the captain was on board him

ſome

ſome time, and the ſhip arrived in the river very healthy.

To go on, notwithſtanding this great ſtorm, the *Fawey* arrived again in *Portland* road, on the 12th of *November*, about 4 in the morning, and at 6, the cuſtom-houſe boat went on board, and ordered the veſſel to *Muther Bank*, to perform another quarantine, where ſhe arrived on the 13th. At this time ſhe had been from *Algier* near eight weeks, which is ſufficient either for killing any diſeaſe or deſtroying the ſailors, had any infection been on board the veſſel, and not only them, but the turtle doves, hogs, and antelopes, which were preſents to the captain and his friends.

By the *logg-book* it appears, that Mr *Styles* the collector's clerk, came along ſide this veſſel *February* the 8th, when the veſſel lay at quarantine on the *Muther Bank*, to examine the captain concerning the cargoe, *&c.* and he remains very well.

But if there had been any infectious diſtemper in the goods, certainly the ſailors muſt have received it at the time they were employed in packing, and in bringing the goods aboard,

ſhifting the canary ſeed, and other merchandize when on board, for this work took them up three days. However, the captain and ſhip's company did make an affidavit before the lord mayor of *London*, that they were not only the whole time whilſt at *Algier*, but afterwards, all healthy, and continued ſo the whole voyage and time of performing the quarantines.

On or about the 8th of *January*, Mrs *Clemens*, the captain's wife, went on board the veſſel; and about a fortnight after a ſervant maid, *Sarah Hales*; they ſtayed on board not only whilſt the ſhip lay quarantine at the *Muther Bank*, but during the whole quarantine afterwards, which was 12 weeks. They never were ſo much as ſick on board, and at this time both are hearty and well. But ſuppoſe any one of the ten had been taken ill or died of an inflammatory or any other fever, would not the bigotted world have ſaid it was the Plague?

The hardſhips the captain and crew ſuffer'd were, 1ſt, Lying quarantine upwards of ſixteen weeks on the *Muther Bank* before the ſhip was ſunk, *viz.* from the 13th of *November* 1753, to the 8th of *March* 1754.

2dly,

2dly, Performing a further quarantine on board the brig, from the 9th to about the 25th of *March*.

3dly, The loſs of the ſhip, cargoe, all the wearing apparel of men and women, ſhip ſtores, and every other article.

4thly, The great hazard they riſqued in foundering or being caſt away, in being expoſed to the moſt blowing weather in the year for eighteen weeks.

Laſtly, Mrs *Clemens* and her maid, in a cold winter rainy day, with bleak winds, were expoſed in a boat, having, at the time of leaving the *Fawey*, nothing allowed to cover them, but a ſort of a long gown made of ozenbriggs; and of this they were again ſtripped as ſoon as the boat came along ſide the brigg. Neither ſhift, petticoat, nor cap had they to keep them warm, during the whole time, and happy for them that they did not get cold, tho' in ſo great danger. When the veſſel was ſunk, the men were covered with frocks and trowzers made of ozenbrigs, of which being ſtripped as ſoon as they came to the brig, they received other

cloaths, and continued aboard about 16 days, after which they were landed at *Portſmonth*.

Whether any of my readers can believe, from this abſtract, that the Plague was on board this ſloop, or whether they can find out the cauſe of complaint, I cannot ſay. However I do ſubmit to their own opinions, for this affair is as myſterious to me as that of the Plague ever being imported from *Turky* or the *Eaſt Indies* to *England*, which no author that I have met with could ever yet prove; and therefore muſt conclude with wiſhing, that ſuch ſuperſtitious abſurdities may no longer be entertained. As for my own part, I am ready to go on board (when commanded) any *Turky* ſhip to examine them, whenever they are impeached of having any diſtemper.

*F I N I S.*

1485. Sweating Sickness broke out in the Army of Henry the 7th coming from France to Wales. & thought to have been brought from the Seige of Rhodes 3 or 4 years before. See D. Reyes de Feb. Ephem. Britt. reld. in 1506. 1517. 1528. & 1551.

See Rodinelli Contagii in Firenze.
Summonte Historia di Napoli.
L^d. Herberts History of Henry 8th
Thuani Historia. Lib. 5.
L^d. Verulams History of Henry Seventh.

1713. the Dunkirk fever was brought over to Engl by the Soldiers from that place in the mont of Sept^r.

Birds die frequently and forsake Countries in the time of the Plague is a fact mentioned by Diemerbrock. de Peste, lib. i. cap. 4.

The Year 148. is the year according to D. Mead when Quarantine were first established at Venice and in Europe

Typographia Curiosa - a book mentioned to me by M^r. Rogers. F.S.A. contains several instances of Plague inoculated by insects.

M^r. Monro mentioned the Case of a Murderer hung in Chains at Inverness about 35. years after which the flies which haunted his putrid body, and then piercing the fruits in the neighbourhood inoculated them with the animalcular corruption and spoill them whereon the peasantry went in the night time & removed & buried the noisome corse